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# Cuba: Undermining or Underlining the Race to the Bottom

Christopher A. Brook

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# Cuba: Undermining or Underlining the Race to the Bottom

## **Cover Page Footnote**

International Law; Commercial Law; Law

# **Cuba: Undermining or Underlining the “Race to the Bottom?”**

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One of the most influential justifications for environmental regulation is under attack. The “race to the bottom” posits that states and nations “race from the desirable levels of environment quality” they “would pursue if they did not face competition for industry to the increasingly undesirable levels that they choose in

the face of such competition.”<sup>1</sup> After years of acceptance, some scholars now cast doubt on this proposition, arguing that market competition promotes optimal levels of environmental regulation.<sup>2</sup> Unfortunately, these arguments have played out almost exclusively on theoretical battlegrounds; very few empirical studies of the “race to the bottom” exist.

Recognizing the peril of utilizing an untested theory to justify environmental regulation, this Comment aims to fill the gap in the discourse. After identifying the central arguments of the proponents and opponents of the “race to the bottom” theory, this Comment examines Cuban environmental reforms in the face of economic difficulties. Such an empirical focus not only provides insight into the development of the Cuban environmental regime, but also allows a more thorough consideration of the current academic debate surrounding the “race to the bottom.”

## I. Theoretical Underpinnings of the “Race to the Bottom”

### A. Introduction

“The widely accepted theoretical model for the race to the bottom,”<sup>3</sup> the Prisoner’s Dilemma, was first applied to environmental problems in 1968 by Garrett Hardin.<sup>4</sup> The Prisoner’s Dilemma posits that when given the option, individual parties act in their own self-interest even when contrary collective action will produce more beneficial results.<sup>5</sup> Like the “race to the bottom,” the Prisoner’s Dilemma argues for state intervention to curb this destructive phenomenon.<sup>6</sup> Hardin’s variation of the Prisoner’s Dilemma applicable in the context of environmental

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<sup>1</sup> Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the “Race-to-the-Bottom” Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210, 1210 (1992).

<sup>2</sup> See *infra* notes 29-33 and accompanying text.

<sup>3</sup> Kirsten H. Engel, *State Environmental Standard-Setting: Is There a “Race” and Is It “to the Bottom”?*, 48 HASTINGS L.J. 271, 274 (1997).

<sup>4</sup> Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244-45 (1968).

<sup>5</sup> SHAUN HARGREAVES HEAP & YANIS VAROUFAKIS, *GAME THEORY: A CRITICAL INTRODUCTION* 36-37 (1995).

<sup>6</sup> *Id.* at 37.

regulation, "The Tragedy of the Commons,"<sup>7</sup> predicted that federal environmental decisions would produce superior individual and collective results rather than rational, yet counter-productive, state decisions.<sup>8</sup>

By 1977, Professor Richard B. Stewart noted that the perceived "Tragedy of the Commons" was a key factor in the explosion of federal environmental legislation in the United States.<sup>9</sup> Stewart argued that the motivation behind federal regulation is the fear that, "in the absence of a non-degradation requirement, clean states might compete with one another for new development, leading to a 'commons' dilemma in which each state permits more degradation than it would prefer or allow if transaction costs did not preclude agreement with competing states."<sup>10</sup> While Stewart wrote largely to highlight the fact that the "race to the bottom" was already driving federal environmental policies,<sup>11</sup> his seminal 1977 article provided a further academic foundation for centralizing environmental regulation.<sup>12</sup>

In the years following these initial applications of the "race to the bottom" in the environmental context, the rationale for federal regulation was commonly accepted. Commentators cautioned that suboptimal environmental results inevitably occurred without

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<sup>7</sup> See Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225, 278 n.183 (1997) (describing the "Tragedy of the Commons" as the manifestation of the "race to the bottom").

<sup>8</sup> See Hardin, *supra* note 4, at 1243.

<sup>9</sup> Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1211 (1977) [hereinafter Stewart, *Pyramids of Sacrifice*].

<sup>10</sup> Richard B. Stewart, *The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decisionmaking: Lessons from the Clean Air Act*, 62 IOWA L. REV. 713, 747 (1977) [hereinafter Stewart, *Environmental Decisionmaking*].

<sup>11</sup> See Stewart, *Pyramids of Sacrifice*, *supra* note 9; Stewart, *Environmental Decisionmaking*, *supra* note 10. For example, the legislative history of the Clean Air Act argues that "the promulgation of Federal emission standards for new sources . . . will preclude efforts on the part of States to compete with each other in trying to attract new plants and facilities without assuring adequate control of extra-hazardous or large-scale emissions therefrom." H.R. Rep. No. 1146, at 2 (1970), *reprinted in* 1970 U.S.C.C.A.N. 5356, 5358.

<sup>12</sup> See Revesz, *supra* note 1.

centralized regulation, as "each state has an incentive to offer the least protection to its workers and residents in order to attract industry."<sup>13</sup> Legislators acted on this principle in passing the Clean Air Act, which promulgated federal standards for air pollution.<sup>14</sup> In justifying its promulgation of minimum air quality standards for the country,<sup>15</sup> Congress relied on the "race to the bottom," arguing that:

[A] state deciding to protect its clean air resources will face a double threat. The prospect is very real that such a state will lose existing industrial plants to more permissive states. But additionally the state will likely become the target of "economic-environmental blackmail" from new industrial plants that will play one state off against another with threats to locate in whichever state adopts the most permissive pollution controls.<sup>16</sup>

Less than a decade after its first application in the field of environmental regulation, the "race to the bottom" was animating the "most comprehensive of modern federal [environmental] statutes," the Clean Air Act.<sup>17</sup>

### *B. The "Race to the Bottom" in an International Context*

The preceding discussion of the "race to the bottom" focused on the theory's application in the American federalist system of government. This section explores the "race to the bottom" in an international context. The general principle that a state could derive a comparative advantage in its quest for industry by lowering its environmental standards applies to a nation seeking an edge in the global marketplace.<sup>18</sup> It is easy to imagine how such an international "race to the bottom" would evolve:

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<sup>13</sup> Susan Bartlett Foote, *Administrative Preemption: An Experiment in Regulatory Federalism*, 70 VA. L. REV. 1429, 1430 (1984).

<sup>14</sup> ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, & POLICY 105-06 (3d ed. 2000).

<sup>15</sup> See 42 U.S.C. § 7409 (1988).

<sup>16</sup> H.R. Rep. No. 95-294, at 136 (1977), reprinted in 1977 U.S.C.C.A.N. 1077, 1213.

<sup>17</sup> See Revesz, *supra* note 1, at 1224.

<sup>18</sup> Richard Stewart, *International Trade and the Environment*, 49 WASH. & LEE L. REV. 1329, 1329 (1992) [hereinafter Stewart, *International Trade and the Environment*].

Each nation, acting independently, fears that other nations will adopt lax environmental requirements, and that it will therefore suffer serious competitive disadvantage by adopting the more stringent standard that it would prefer. Since each nation reasons in the same way, all adopt less stringent requirements than they would prefer individually.<sup>19</sup>

Just as in the federal context, the perception that lower environmental standards result in greater economic growth could produce a “race to the bottom” even if there was no actual causal relationship between the level of regulation and financial results.<sup>20</sup>

The significant distinction between the “race to the bottom” in an international, as opposed to federal, context is that it would be more acute on the global stage. In a federal system such as the United States, certain environmental minimums can be required of each state.<sup>21</sup> On the global stage, there is no comparable coercive power.<sup>22</sup> This is not to say that intergovernmental organizations (“IGOs”) such as the United Nations are powerless.<sup>23</sup> The power of IGOs is limited, however, by the fundamental reality that nations can only be bound by international agreements if they

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<sup>19</sup> Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039, 2058 (1993) [hereinafter Stewart, *Environmental Regulation and International Competitiveness*].

<sup>20</sup> *Id.* at 2056. Stewart notes that:

Many people in industry, environmental groups, and Congress argue that differences in national environmental requirements do have a significant impact on competitiveness, and that U.S. industry is suffering as a result of disparities between relatively stringent U.S. regulatory standards and those of many U.S. trading partners. In politics, appearance and belief become reality.

*Id.* at 2085.

<sup>21</sup> For example, the aforementioned Clean Air Act establishes minimum air quality standards which are applicable to each state in the United States. 42 U.S.C. §§ 7401-7642 (1988).

<sup>22</sup> See *Developments in the Law: International Environmental Law*, 104 HARV. L. REV. 1484, 1587 (1991) [hereinafter *Developments*].

<sup>23</sup> On the contrary, these organizations “play an indispensable role in the creation and enforcement of international law.” *Id.* at 1586. Recent years have seen a proliferation of international environmental agreements on matters ranging from endangered species to marine pollution. See LAKSHMAN D. GURUSWAMY ET AL., SUPPLEMENT OF BASIC DOCUMENTS TO INTERNATIONAL ENVIRONMENTAL LAW & WORLD ORDER 103-1124 (1994) (excerpts of environmental treaties). Such treaties are almost always initiated by IGOs. *Developments*, *supra* note 22, at 1587.

choose to accept them.<sup>24</sup> For example, consider the United States and the Kyoto Protocol on Climate Change.<sup>25</sup> Despite its status as a large emitter of greenhouses gases,<sup>26</sup> the international community could do nothing to compel the United States to curb emissions when the country failed to ratify the Kyoto Protocol.<sup>27</sup> This lack of international "authority binding either on states or on individuals"<sup>28</sup> means that there is nothing to stop a nation from failing to comply with environmental regulations if it chooses to do so in order to attract capital.

### *C. Questioning the "Race to the Bottom"*

The "race to the bottom" was largely viewed as a fact of environmental regulation throughout the 1970s, 1980s, and into the 1990s. This unquestioning acceptance ended with the 1992 publication of Professor Richard Revesz's influential article, "Rehabilitating Interstate Competition: Rethinking the 'Race-to-the Bottom' Rationale for Federal Environmental Regulation."<sup>29</sup> Harshly criticizing the status quo, Revesz concluded "that the forces of interstate competition, far from being conclusively undesirable, are at least presumptively beneficial."<sup>30</sup>

Revesz based this conclusion on a theoretical critique of the "race to the bottom." Questioning the theory's underpinnings, Revesz stated, "[t]here are no formal models supporting the proposition that competition among states creates a prisoner's dilemma in which states, contrary to their interests, compete for

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<sup>24</sup> See D. BOWETT, *THE LAW OF INTERNATIONAL INSTITUTIONS* 146 (1982).

<sup>25</sup> The Kyoto Protocol was "an agreement designed to protect the environment by setting targets for reducing greenhouse gas emissions by signatory countries." Greg Kahn, *The Fate of the Kyoto Protocol under the Bush Administration*, 21 *BERKELEY J. INT'L L.* 548, 550 (2003).

<sup>26</sup> See *id.* at 550.

<sup>27</sup> See generally *id.* It was under President George W. Bush that United States participation in the Kyoto Protocol was allowed to wither. See *id.* at 551-55. Ironically, President Bush's opposition was based in part on the fact that other nations with major populations were not required to comply with the agreement. Letter to Members of the Senate on the Kyoto Protocol on Climate Change, 37 *WEEKLY COMP. PRES. DOC.* 444 (Mar. 19, 2001).

<sup>28</sup> *Developments, supra* note 22, at 1587.

<sup>29</sup> See generally Revesz, *supra* note 1.

<sup>30</sup> *Id.* at 1253.



industry by offering progressively laxer standards.”<sup>31</sup> Seeking to exploit this supposed theoretical vacuum, Revesz sought to dispel the notion of a “race to the bottom” using neoclassical economic theory.<sup>32</sup> Instead of a “race to the bottom,” neoclassical economic theory predicts jurisdictions “will seek to maximize their social welfare” and, therefore, “will not set suboptimally lax environmental standards.”<sup>33</sup> On the basis of this theoretical foundation, Revesz concluded that “competition among states for industry should not be expected to lead to a race that decreases social welfare,” but instead, “such competition can be expected to produce an efficient allocation of industrial activity among the states.”<sup>34</sup>

Scholars fiercely rebutted Revesz’s rejection of the “race to the bottom.” Traditionalists, such as Professor Kirsten Engel, challenged Revesz’s contention that theoretical support for the “race to the bottom” was weak, pointing out that the “Prisoner’s Dilemma was applied to the generation of public goods as early as 1965 . . . and applied specifically to environmental problems in 1968.”<sup>35</sup> Engel found support for the “race to the bottom” not merely in such historical applications but in Revesz’s article as well. Engel deemed Revesz’s “claim for the theoretical vacuum underlying the race to the bottom” nothing short of “puzzling,”<sup>36</sup> given his skillful description of how a race to the bottom could envelope an island jurisdiction.<sup>37</sup> Engel questioned how Revesz could construct “a simple game-theoretic model illustrating how interstate competition might theoretically lead to a race to the bottom” and simultaneously argue no models support such an

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<sup>31</sup> *Id.* at 1242.

<sup>32</sup> *See id.* In particular, Revesz focuses on the writings of nonclassical economists Charles Tiebout, William Fischel, Wallace Oates, and Robert Schwab. *Id.* at 1236-44.

<sup>33</sup> *Id.* at 1242.

<sup>34</sup> *Id.* at 1211-12.

<sup>35</sup> Engel, *supra* note 3, at 298.

<sup>36</sup> *Id.* at 297 n.73.

<sup>37</sup> *See* Revesz, *supra* note 1, at 1233. Revesz’s purpose in creating this model was simply to describe what he was questioning. However, his creation of a compelling model articulating the “race to the bottom” is inconsistent with his assertion that “there are no formal models supporting the proposition that competition among states creates a prisoner’s dilemma in which states, contrary to their interests, compete for industry by offering progressive laxer standards.” *Id.* at 1242.

argument.<sup>38</sup>

Not only did traditionalists seek to bolster the theoretical underpinnings of the "race to the bottom," but they also attempted to undermine the neoclassical economic theory that led Revesz to endorse interstate competition. Highlighting that they only predicted efficient outcomes when accompanied by a broad array of assumptions,<sup>39</sup> traditionalists were quick to dismiss neoclassical economic theories as unrealistic.<sup>40</sup> As soon as these assumptions were eliminated, even the neoclassical economists upon whom Revesz relied stipulated that "efficient outcomes, not surprisingly, are not to be expected."<sup>41</sup> Conceding that competition may indeed produce optimal environmental standards within the world created by neoclassical economic models,<sup>42</sup> traditionalists focused on the fact that the narrow world of these theories bore little relationship to "the reality of environmental regulation."<sup>43</sup> The basic critique is that Revesz slides "too easily from conclusions within the context of his stylized models to claims about the real world."<sup>44</sup>

## II. Empirically Evaluating the "Race to the Bottom"

### A. *The Current State of Empirical Studies*

Given the ample theoretical discussion and the great impact the "race to the bottom" has had upon policymaking, one might assume the theory has been subjected to thorough empirical

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<sup>38</sup> Engel, *supra* note 3, at 297 n.73.

<sup>39</sup> Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE J. ON REG. 67, 90 (1996). Specifically, Swire notes that "Revesz and the economists . . . assume . . . [that] the effects of pollution are felt entirely within the state creating the problem," that "states can measure both the costs and benefits of environmental restrictions, and can determine the 'socially optimal levels of pollution reduction,'" and that "state decision-makers automatically and effectively achieve the preferences of their citizens." *Id.*

<sup>40</sup> See Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 635 (1996).

<sup>41</sup> Wallace E. Oates & Robert Schwab, *Economic Competition Among Jurisdictions: Efficiency Enhancing or Distortion Inducing?*, 35 J. PUB. ECON. 333, 350 (1988).

<sup>42</sup> Swire, *supra* note 39, at 88.

<sup>43</sup> *Id.* at 95.

<sup>44</sup> *Id.*

testing. However, there is a lack of such evidence in the scholastic universe. While there are many studies documenting the limited effect environmental standards have on firm location decisions,<sup>45</sup> little attention has been given to the related question of whether when states relax environmental standards in an effort to attract industry,<sup>46</sup> that is a clear manifestation of the "race to the bottom." Perhaps this explains the revolutionary impact of Revesz's article *Rehabilitating Interstate Competition*, which contained no empirical support for its broad reformation of the "race to the bottom" debate.<sup>47</sup>

Those writing in the wake of Revesz recognize this fact in arguing "that the problem" in the "race to the bottom" discourse "is not a lack of theory . . . but too little empirical evidence."<sup>48</sup> While the "race to the bottom" and Revesz's neoclassical economic revision both have their theoretical strengths and weakness, "the ultimate test of a model is its real world predicative ability."<sup>49</sup> Commentators argue that this fact is particularly true when dealing "in the realities of environmental problems and regulation" because theory "often fails to capture the unique features of the ecological domain."<sup>50</sup>

In her 1997 test of the theory underlying the "race to the bottom," Engel compiled a survey of five groups of environmental standard setters: state environmental regulators, state legislators, state development agency officials, state chamber of commerce officials, and directors and staff members of state citizen

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<sup>45</sup> See, e.g., ROBERT W. CRANDALL, *MANUFACTURING ON THE MOVE* 55-58 (1993); WILLIAM R. LOWRY, *THE DIMENSIONS OF FEDERALISM: STATE GOVERNMENTS AND POLLUTION CONTROL POLICIES* 12-15 (1992); ROGER W. SCHMENNER, *MAKING BUSINESS LOCATION DECISIONS* 39-41 (1982); Michael Epping, *Tradition in Transition: The Emergence of New Categories in Plant Location*, 19 *ARK. BUS. & ECON. REV.* 16 (1986); Joseph Friedman et al., *What Attracts Foreign Multinational Corporations? Evidence from Branch Plant Location in the United States*, 32 *J. REGION SCI.* 403, 410-14 (1992); Paul H. Templet & Stephen Farber, *The Complementarity Between Environmental and Economic Risk: An Empirical Analysis*, 9 *ECOLOGICAL ECON.* 153 (1994).

<sup>46</sup> Engel, *supra* note 3, at 338.

<sup>47</sup> See generally Revesz, *supra* note 1.

<sup>48</sup> Engel, *supra* note 3, at 277-78.

<sup>49</sup> See DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE* 27-28 (1991).

<sup>50</sup> Esty, *supra* note 40, at 613.

environmental organizations.<sup>51</sup> On the basis of these surveys, Engel reached the conclusion that despite "differences in environmental standards [that] are a statistically insignificant predictor of firm location . . . a substantial portion of states will nonetheless apparently relax their environmental standards out of concern over industry relocation and siting."<sup>52</sup>

Engel based this overall conclusion on three findings from her survey.<sup>53</sup> First, responses to questionnaires revealed "the possibility that industry might relocate or site a new plant elsewhere is something of a concern to the environmental regulators in many states, and affects environmental policy-making in some manner in most states."<sup>54</sup> Second, Engel's study found states attempted to mimic the environmental standards of other states, particularly those nearby.<sup>55</sup> Finally, "concern over industry relocation and siting causes state legislators and business groups to exert substantial pressure upon state environmental regulators to relax the strictures of state environmental programs."<sup>56</sup>

While problematic to draw broad conclusions on the basis of eighty surveys of environmental regulators,<sup>57</sup> Engel's data represents the only empirical study of a "race to the bottom." Therefore, it merits deference. Nevertheless, instead of accepting the findings of Engel's landmark studies, this Comment attempts to produce additional empirical data from which to draw stronger conclusions.

## *B. Advancing the Debate through a Country Specific Study*

### *i. Why Study Cuba in the "Race to the Bottom"*

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<sup>51</sup> Engel, *supra* note 3, at 337-38.

<sup>52</sup> *Id.* at 316. The disconnect between evidence showing environmental standards is not determinative in plant sitings and persistent decisions to relax governmental regulation in order to attract industry is usually explained by the enduring perception that rolling back environmental standards will net a jurisdiction economic gain. See, e.g., Sarnoff, *supra* note 7, at 280; Swire, *supra* note 39, at 109.

<sup>53</sup> Engel, *supra* note 3, at 340-46.

<sup>54</sup> *Id.* at 340-41.

<sup>55</sup> See *id.* at 344-45.

<sup>56</sup> *Id.* at 346.

<sup>57</sup> See *id.* at 341.

### Context?

Cuba is the focal point of this Comment's empirical test of the "race to the bottom" because of the setting created by the country's recent economic difficulties and subsequent regulation of the environment. Scholars have asserted that countries with developing economies "will prefer to adopt a lower level of environmental quality in order to achieve a higher and more rapidly growing domestic income."<sup>58</sup> If ever there was an economy in need of capital influx, regardless of the environmental consequences, it is Cuba. With the fall of the Soviet Union in 1990, nearly \$6 billion in annual Soviet subsidies to Cuba disappeared overnight.<sup>59</sup> In addition to losing its main economic benefactor,<sup>60</sup> Cuba lost its main source of imports<sup>61</sup> and over 85% of foreign markets for its goods.<sup>62</sup> In the years that followed, a veritable economic depression ensued.<sup>63</sup> Manufacturing output decreased by 28%,<sup>64</sup> exports and imports declined by seventy-nine and 75%, respectively,<sup>65</sup> and the gross domestic product decreased

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<sup>58</sup> Ralph C. d'Arge & Allen V. Kneese, *Environmental Quality and International Trade*, 26 INT'L ORG. 419, 434 (1972). This is not just a value determination made by decisionmakers in developing countries as "citizens of developing countries often place a lower value on reduction environmental externalities than citizens of developed countries." Stewart, *Environmental Regulation and International Competitiveness*, *supra* note 19, at 2099.

<sup>59</sup> Jonathan R. Coleman, *The Economic Impact of U.S. Sanctions with Respect to Cuba*, in 11 CUBA IN TRANSITION 86, 87 (2001).

<sup>60</sup> See Carmelo Mesa-Lago, *The Cuban Economy in 1999-2001: Evaluation of Performance and Debate on the Future*, in 11 CUBA IN TRANSITION 1, 4 (2001) [hereinafter Mesa-Lago, *The Cuban Economy in 1999-2001*].

<sup>61</sup> Jose Alvarez & William A. Messina, Jr., *Cuba's New Agricultural Cooperatives and Markets: Antecedents, Organization, Early Performance and Prospects*, in 6 CUBA IN TRANSITION 175, 175 (1996). Socialist bloc countries were the origin of approximately 86% of Cuban imports in the late 1980s. *Id.*

<sup>62</sup> Paolo Spadoni, *The Impact of the Helms-Burton Legislation on Foreign Investment in Cuba*, in 11 CUBA IN TRANSITION 18, 19 (2001) [hereinafter Spadoni, *The Impact of the Helms-Burton Legislation*].

<sup>63</sup> See Maria Dolores Espino, *Cuban Tourism During the Special Period*, in 10 CUBA IN TRANSITION 360, 360 (2000).

<sup>64</sup> CARMELO MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES: COMPARATIVE POLICY AND PERFORMANCE: CHILE, CUBA, AND COSTA RICA 328 (2000) [hereinafter MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES].

<sup>65</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 3.

by more than 40%.<sup>66</sup> The impact upon the Cuban people was dramatic: employment fell nearly 7%, real wages plummeted 40% in Cuba's cities, and "personal consumption declined 15% each year until 1994."<sup>67</sup>

The government responded to this economic crisis, referred to as the "special period in time of peace,"<sup>68</sup> by gradually shifting from total state control of the economy toward capitalist practices.<sup>69</sup> The government legalized the use of American currency, broke up state monopolies on land to establish agricultural cooperatives,<sup>70</sup> authorized self-employment,<sup>71</sup> and encouraged foreign investment in the Cuban economy.<sup>72</sup> New regulations authorized three distinct options for foreign investors: joint ventures,<sup>73</sup> international economic associations (IEAs),<sup>74</sup> and companies completely backed by foreign capital.<sup>75</sup>

In order to persuade reluctant foreign entrepreneurs, the government recognized mixed enterprises owned in part by foreign corporations<sup>76</sup> and allowed these organizations considerable autonomy.<sup>77</sup> The government permitted mixed

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<sup>66</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 19.

<sup>67</sup> Charles P. Trumbull IV, *Economic Reforms and Social Contradictions in Cuba*, in 10 CUBA IN TRANSITION 305, 306 (2000).

<sup>68</sup> SERGIO DIAZ-BRIQUETS & JORGE F. PEREZ-LOPEZ, CONQUERING NATURE: THE ENVIRONMENTAL LEGACY OF SOCIALISM IN CUBA 3 (2000).

<sup>69</sup> SHELDON SMITH, LATIN AMERICA IN TRANSITION: THE INFLUENCE OF CULTURE ON ECOLOGY, POWER, AND DIVERSITY 308 (2003).

<sup>70</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 19.

<sup>71</sup> *Id.*

<sup>72</sup> Coleman, *supra* note 59, at 87.

<sup>73</sup> Matias F. Travieso-Diaz & Charles P. Trumbull IV, *Foreign Investment in Cuba: Prospects and Perils*, in 12 CUBA IN TRANSITION 179, 180 (2002). "A joint venture is a legal entity consisting of one or more Cuban parties and one or more foreign investors." *Id.*

<sup>74</sup> *Id.* IEAs are organizations which do "not require the establishment of a legal entity separate from the contracting parties." *Id.* at 181. In short, "each party agrees to make specific contributions to the IEA, but no capital is set aside" by the respective parties. The most common form of IEAs are production or management contracts. *Id.*

<sup>75</sup> *Id.* at 180. These "enterprises . . . are totally owned by foreign investors." *Id.* at 182.

<sup>76</sup> Frederic Evenson, *A Deeper Shade of Green: The Evolution of Cuban Environmental Law and Policy*, 28 GOLDEN GATE U. L. REV. 489, 516-17 (1998).

<sup>77</sup> Trumbull, *supra* note 67, at 307.

enterprises to choose their own staffing patterns, establish individual production plans,<sup>78</sup> classify the nature of their products, select their boards of directors, set prices, and transfer earnings abroad via convertible currency.<sup>79</sup> The novelty of a communist nation permitting the influx of private foreign capital into an economy previously under exclusive governmental control cannot be understated.<sup>80</sup>

These efforts increased foreign activity in the Cuban economy.<sup>81</sup> By the end of 2001, 412 international business associations were operating in Cuba,<sup>82</sup> with the number of foreign enterprises increasing by thirty each year.<sup>83</sup> These foreign enterprises have begun to play a large role in Cuba's export economy. In 2001, for instance, foreign-investor export revenue was \$768.2 million,<sup>84</sup> accounting for nearly 15% of Cuban exports.<sup>85</sup> In addition, numerous important Cuban industries rely on foreign funding.<sup>86</sup> For example, all investment in oil exploration, metal mining, lubricants, and personal hygiene products comes from foreign sources,<sup>87</sup> while sizable amounts of foreign money are found in the citrus, cement, and international tourism industries.<sup>88</sup> In total, cumulative foreign investment in Cuba increased from \$2.1 billion in 1995 to \$4.3 billion in 2000.<sup>89</sup>

Although foreign investment played a role in ending the

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<sup>78</sup> DEBRA EVENSON, *REVOLUTION IN THE BALANCE: LAW AND SOCIETY IN CONTEMPORARY CUBA* 254 (2d ed. 2003).

<sup>79</sup> Trumbull, *supra* note 67, at 307.

<sup>80</sup> Paolo Spadoni, *Foreign Investment in Cuba: Recent Developments and Role in the Economy*, in 12 CUBA IN TRANSITION 158, 158 (2002) [hereinafter Spadoni, *Foreign Investment in Cuba*].

<sup>81</sup> *Id.* at 160-61.

<sup>82</sup> *Id.*

<sup>83</sup> *See id.*

<sup>84</sup> *Id.* at 173.

<sup>85</sup> Travieso-Díaz & Trumbull, *supra* note 73, at 185.

<sup>86</sup> Spadoni, *Foreign Investment in Cuba*, *supra* note 80, at 175.

<sup>87</sup> *Id.* at 174.

<sup>88</sup> *Id.* at 174-75. The levels of foreign investment in the citrus, cement, and international tourism industries are 70%, 50%, and 49%, respectively. *Id.*

<sup>89</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 5.

depression of the early 1990s,<sup>90</sup> it has not been a cure-all for Cuba's economic problems.<sup>91</sup> Significant obstacles to conducting business in Cuba remain for foreign investors.<sup>92</sup> In 1996, the United States Congress enacted the Helms-Burton legislation,<sup>93</sup> which codified America's long-running economic sanctions against Cuba<sup>94</sup> and sought to "complicate Havana's access to external financing as well as to create a riskier and more uncertain business environment for [foreign] companies investing in the Caribbean nation."<sup>95</sup> In addition to the complications posed by the Helms-Burton legislation, potential foreign investors must go through a rigorous bureaucratic process in order to have their investment proposals accepted by the Cuban government.<sup>96</sup> The inability to fully capitalize on revenue from foreign investment, coupled with the severe economic depression of the early 1990s,<sup>97</sup> leaves the island nation in a perilous economic situation.<sup>98</sup> Nearly a decade later, Cuban exports and imports today continue to lag behind 1980s trading levels.<sup>99</sup> Consequently, the gross domestic product has increased at far more modest levels than it decreased in the early 1990s.<sup>100</sup> In short, although Cuban economic recovery has begun, there is still much room for growth.

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<sup>90</sup> *Id.* at 2.

<sup>91</sup> *Id.* at 3.

<sup>92</sup> See, e.g., Travieso-Diaz & Trumbull, *supra* note 73, at 186-92.

<sup>93</sup> 22 U.S.C. § 6032 (2002).

<sup>94</sup> *Id.*

<sup>95</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 18.

<sup>96</sup> Travieso-Diaz & Trumbull, *supra* note 73, at 186-92. In particular, the authors highlight the Cuban government's generally "restrictive approach to foreign investment," and the bureaucratic impediments it has erected, particularly in regards to labor relations as serious obstacles to foreign investment in Cuba. *Id.*

<sup>97</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 19 (noting that Cuba's gross domestic product decreased by more than 40% in the early 1990s).

<sup>98</sup> See, e.g., MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES, *supra* note 64, at 328; Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 3.

<sup>99</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 3.

<sup>100</sup> MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES, *supra* note 64, at 328. From 1991 to 1993, the Cuban gross domestic product decreased an average of 12.4%. Comparatively, the gross domestic product increased by only 0.7% in 1994, 1.9% in 1995, and 7.1% in 1996. *Id.*



This snapshot of the Cuban economy reveals why the island nation is the subject of this critical analysis of the “race to the bottom.”<sup>101</sup> Cuba is a nation that over the past fifteen years has suffered severe economic displacement. Its attempts to restructure its economy have only partially alleviated these problems. In attempting to resurrect its economy, Cuba has demonstrated a willingness to bend or break previously adhered to rules to attract capital.<sup>102</sup> Based on this information, adherents of the “race to the bottom” would hypothesize that Cuba’s need for economic investment would lead to a rejection of environmental regulation.

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<sup>101</sup> Apart from its implications for the “race to the bottom” debate, recent developments in Cuban environmental law merit study due to their ramifications on one of the world’s most diverse landscapes. When Christopher Columbus first reached Cuba, he reported that “th[e] island [was] the most beautiful that eyes have ever seen.” Christopher Columbus, *Christopher Columbus “Discovers” Cuba*, in THE CUBA READER 9, 11 (2003). As this Comment will discuss, Cuba has not been spared environmental degradation since Columbus first voyaged to the New World. See, e.g., DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 141 [Table 6.1] (documenting the loss of a large majority of Cuba’s forests since Columbus’s landing); Daniel J. Whittle et al., *International Tourism and Protection of Cuba’s Coastal and Marine Environments*, 16 TUL. ENVTL. L.J. 533, 540 (2003). It has, however, entered the new millennium relatively unscathed. DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 17 (noting that Cuba suffered much less severe environmental degradation than other Soviet Bloc nations). What remains in Cuba is worth protecting: Cuba is home to largely natural coastal environments, Whittle et al., *supra* at 535, nearly 7,000 plants species, Oliver A. Houck, *Cuba’s New Law of the Environment: An Introduction*, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION 1 (1999) (noting that this figure represents more than one-third of the plant species identified in America and Canada combined) [hereinafter Houck, *Cuba’s New Law of the Environment*], and an impressive array of animal life, Whittle et al., *supra* at 538-40. In fact, “the island has more than 300 species of birds, 18,000 species of insects, 38,000 species of crustaceans, and 1,500 species of mollusks.” Whittle et al., *supra* at 538-40. All told “the island supports twelve times as many mammal species per hectare as the United States and Canada, 29 times as many amphibians and reptiles, and 39 times as many birds.” Houck, *Cuba’s New Law of the Environment*, *supra* at 1. Though its impact on the “race to the bottom” motivates this Comment, developments in Cuban environmental regulation are also worth chronicling to judge whether one of the world’s most pristine environments will survive modernization.

<sup>102</sup> See, e.g., Coleman, *supra* note 59, at 87 (noting Cuba’s decision in the early 1990s to permit and actively seek out foreign investment).

ii. *How Cuba Fits in the "Race to the Bottom" Debate*

Given Cuba's need for investment since the early 1990s, the case for studying its efforts at environmental protection in the context of the "race to the bottom" is easily stated: if ever there was a country that would "race from the desirable levels of environmental quality" attempting to attract capital,<sup>103</sup> it is this beleaguered Caribbean nation. Cuba does not, however, fit perfectly into either the traditional "race to the bottom" model<sup>104</sup> or the recent revisionist critique.<sup>105</sup> The traditional "race to the bottom" envisions robust market competition to which the still insular Cuban economy is not yet exposed.<sup>106</sup> Additionally, Revesz's critique assumes citizens of the jurisdiction in question are perfectly mobile,<sup>107</sup> a requirement Cuba does not fulfill.<sup>108</sup> Despite these shortcomings, Cuba can still help to shed light on whether the "race to the bottom" remains a viable theory.

The "race to the bottom" presumes that the state or nation in question is a competitor for industry.<sup>109</sup> Prior to the collapse of the Soviet Union, Cuba relied on its status as a Soviet client state for economic survival; it was immune from the "race to the bottom" because it did not have to compete for industry.<sup>110</sup> Today, Cuba is competing in the world marketplace, soliciting foreign investment from sources as varied as Canada, China, and Europe.<sup>111</sup> Nonetheless, it is possible to claim the island nation does not compete for industry at a sufficient level to make the "race to the bottom" applicable given the ongoing economic sanctions against Cuba by the United States.<sup>112</sup> Proponents of this argument point to

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<sup>103</sup> Revesz, *supra* note 1, at 1210.

<sup>104</sup> See *infra* notes 109-14 and accompanying text.

<sup>105</sup> See *infra* notes 120-25 and accompanying text.

<sup>106</sup> See *infra* notes 112-14 and accompanying text.

<sup>107</sup> See *infra* note 120 and accompanying text.

<sup>108</sup> See *infra* note 125 and accompanying text.

<sup>109</sup> As mentioned previously, the "race to the bottom" is defined as a "race from desirable levels of environmental quality" a state or nation "would pursue if they did not face competition for industry to the increasingly undesirable levels that they choose in the face of such competition." Revesz, *supra* note 1, at 1210.

<sup>110</sup> See, e.g., Coleman, *supra* note 59, at 87.

<sup>111</sup> See Spadoni, *Foreign Investment in Cuba*, *supra* note 80, at 165 [Figure 4].

<sup>112</sup> 22 U.S.C. § 6032 (2002).

the deprivation of \$67 billion in trade caused by over forty years of economic sanctions by the United States<sup>113</sup> and evidence that foreign investment has become less secure in Cuba since the passage of the Helms-Burton legislation.<sup>114</sup>

This argument fails to recognize that "U.S. economic sanctions with respect to Cuba generally had a minimal overall historical impact on the Cuba economy."<sup>115</sup> Although Cuba was denied a great deal of U.S. investment due to economic sanctions,<sup>116</sup> it adequately replaced these funds with Soviet subsidies through the 1980s.<sup>117</sup> Even following the adoption of the Helms-Burton legislation, foreign investment in Cuba increased<sup>118</sup> as companies targeted by the legislation have not divested themselves of their Cuban investments.<sup>119</sup> While sanctions have kept Cuba from becoming a full-fledged competitor in the global marketplace, its efforts to encourage foreign investment have eased the island nation into a more competitive economic stance. These steps have been successful enough to support a study as to whether initial Cuban attempts to attract foreign investment have been accompanied by a lowering of environmental standards, the telltale sign of a "race to the bottom."

It is also possible to claim that Cuba cannot shed light on the Revesz critique because it does not fulfill one of his model's principal assumptions. Revesz's criticism of the "race to the bottom" rests upon numerous suppositions, including that "individuals are fully mobile and choose the jurisdiction they live

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<sup>113</sup> Coleman, *supra* note 59, at 89.

<sup>114</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 27. Helms-Burton complicates foreign investment in Cuba by allowing American citizens who had property expropriated without compensation by the Cuban government to sue foreign companies that "traffic" in that property. *Id.*

<sup>115</sup> Coleman, *supra* note 59, at 87. This is largely the case because of the presence of alternative, non-American markets for Cuban goods. *Id.* at 93.

<sup>116</sup> *Id.* at 89.

<sup>117</sup> See *supra* text accompanying notes 59-62.

<sup>118</sup> Spadoni, *The Impact of the Helms-Burton Legislation*, *supra* note 62, at 35. Cuba received \$568 million in foreign direct investment from 1990 to 1995, before the implementation of Helms-Burton. *Id.* In the five years after the passage of this legislation, 1996 to 2000, Cuba benefited from \$1.3 billion in foreign direct investment. *Id.*

<sup>119</sup> Spadoni, *Foreign Investment in Cuba*, *supra* note 80, at 162.

in based on the taxes that the jurisdiction imposes on its residents and the bundle of services . . . it provides.”<sup>120</sup> Commentators have derided Revesz’s model as depending on “heroic assumptions,”<sup>121</sup> including the belief that individuals can move whenever they choose.<sup>122</sup> Such a “restrictive assumption”<sup>123</sup> ignores everyday events in human life, such as the need to move in response to the loss of a job.<sup>124</sup> The fact that only 20,000 Cubans are allowed to immigrate to the United States annually<sup>125</sup> should not eliminate Cuba from a discussion of Revesz’s writing. Rather, it should highlight a shortcoming in his model. Despite Cuba’s failure to fulfill the mobility requirement, its recent liberalization of foreign investment rules tests Revesz’s central assertion “that the forces of interstate competition, far from being conclusively undesirable, are at least presumptively beneficial.”<sup>126</sup>

As highlighted by the previous discussion, Cuba is not the ideal test case for the “race to the bottom” and the recent critique of this theory. Its quest for foreign investment is too limited and recent to perfectly test Stewart’s concept of the “race to the bottom,” and its citizens are not “fully mobile” as assumed by Revesz’s model.<sup>127</sup> Nonetheless, Cuba is an excellent test of the overarching theme of the “race to the bottom” that, when faced with market competition, a state or nation will set its environmental standards at a suboptimal level in an attempt to attract industry.<sup>128</sup> Accordingly, further investigation of developments in environmental policymaking and enforcement on this island nation are warranted.

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<sup>120</sup> Revesz, *supra* note 1, at 1236.

<sup>121</sup> See, e.g., Esty, *supra* note 40, at 635.

<sup>122</sup> See *id.* at 635 n. 243.

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> Christopher Marquis, *U.S. Halts Cuban Immigration Talks; Worsening of Ties Seen*, N.Y. TIMES, Jan. 8, 2004, at A5 [hereinafter Marquis, *U.S. Halts Immigration Talks*]. It is possible immigration of Cubans to the United States could end due to worsening ties between the United States and Cuba, See, e.g., Christopher Marquis, *Bush’s Allies Plan to Block Effort to Ease Ban on Cuban Travel*, N.Y. TIMES, Nov. 13, 2003, at A6 [hereinafter Marquis, *Block Effort to Ease Ban on Cuban Travel*].

<sup>126</sup> Revesz, *supra* note 1, at 1253.

<sup>127</sup> *Id.* at 1236.

<sup>128</sup> *Id.* at 1210.

### III. Cuba

#### A. Political Background

United States-Cuban political tensions stem from the 1959 Cuban revolution led by communist leader Fidel Castro.<sup>129</sup> As the Castro government forged more intimate ties with the Soviet Union in the wake of the revolution, the relationship between the United States and Cuba disintegrated.<sup>130</sup> In 1961, moving to isolate the Castro government, the United States ceased diplomatic relations with Cuba.<sup>131</sup> By 1963, the United States forbade the importation of Cuban goods and exportation of American goods to Cuba, prohibited American citizens from visiting Cuba, and pressured other nations to sever their economic and political ties with the Caribbean island.<sup>132</sup>

Debates on environmental policy frequently break down along political lines. On the one hand, there are commentators who approach every mandate undertaken by the Cuban government with skepticism, refusing to credit it for even the most unquestionably laudable measure of environmental protection.<sup>133</sup> On the other hand, there are commentators whose cheerleading of

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<sup>129</sup> ANN LOUISE BARDACH, CUBA CONFIDENTIAL: LOVE AND VENGEANCE IN MIAMI AND HAVANA app. 13 (2002).

<sup>130</sup> *Id.*

<sup>131</sup> *See id.*

<sup>132</sup> *See id.*

<sup>133</sup> *See e.g.*, Larry S. Daley, *Restoration of Cuban Gallery Forest, Especially on the Banks of the Bayamo and Other Rivers of the Cauto Basin*, in 12 CUBA IN TRANSITION 225, 225 (2002). In his discussion of Cuban forestry issues, Daley asserts, “[i]n the Cuba of the past century, reforestation has not been easy, and mostly unsuccessful. Given its forty years in power, and absolute authority, a large proportion of responsibility for these failures can be laid at the feet of the present Cuban government [the Castro regime].” *Id.* As will be discussed in greater detail later in this Comment, these charges of forestry mismanagement are without a factual basis. The data shows that through a program of limiting annual cutting rates in Cuba’s forests, JACK WESTOBY, INTRODUCTION TO WORLD FORESTRY: PEOPLE AND THEIR TREES 132 (1989), and a massive reforestation effort, James E. Ross, *Factors Affecting the Potential Market in Cuba for Selected U.S. Forest Products*, in 9 CUBA IN TRANSITION 103, 103 (1999), the Cuban government has stemmed the tide of five centuries of consistent deforestation. *See* DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 141 [Table 6.1]. Unfortunately, statements like Daley’s comments on Cuban forestry, which lack a factual basis, are too common in this arena where political polemic can overpower balanced analysis.

Cuban environmental protection reforms drowns out the questionable durability of such changes.<sup>134</sup>

Over the years, the level of political and economic tension between the nations has fluctuated. The late 1970s saw a thaw in this ongoing dispute, as Presidents Ford and Carter actively pursued efforts to normalize U.S. relations with Cuba.<sup>135</sup> Lately, the pendulum has swung in the opposite direction. In 1996, Congress made foreign investment in Cuba a riskier proposition by passing the aforementioned Helms-Burton legislation.<sup>136</sup> President George W. Bush continues this hard-line approach, expelling numerous Cuban diplomats from the United States,<sup>137</sup> suspending immigration talks with Cuban officials,<sup>138</sup> quashing efforts to make visiting Cuba easier,<sup>139</sup> and attempting to prohibit Cuban exiles from sending care packages to relatives still living on the island.<sup>140</sup> During these ups and downs, the lack of an open political and economic relationship between the countries has remained a constant since the communist takeover in 1959.<sup>141</sup>

Recognizing that an analysis based on preconceived political opinions prevents a serious inquiry into the efficacy of Cuban environmental efforts, this Comment eschews preliminary conclusions. The review first focuses on recent developments in the Cuban environmental framework and then turns to the implementation of these environmental policies. Instead of presumptively dismissing policy advances or failing to inspect the

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<sup>134</sup> See GLOBAL EXCHANGE, *THE GREENING OF THE REVOLUTION: CUBA'S EXPERIMENT WITH ORGANIC AGRICULTURE* 79-82 (Peter Rosset & Medea Benjamin eds., 1994) [hereinafter *THE GREENING OF THE REVOLUTION*]. In supporting Cuba's experiment with organic agriculture, the authors skirt the larger question of whether this transformation "will ultimately be successful" in favor of simply concluding that "what [the Cubans] have already achieved under conditions of extreme adversity is impressive." *Id.* at 82.

<sup>135</sup> *Id.*

<sup>136</sup> 22 U.S.C. § 6032 (2002).

<sup>137</sup> Christopher Marquis, *Striving to Punish Cuba, U.S. Expels 14 of Its Diplomats*, N.Y. TIMES, May 14, 2003, at A11.

<sup>138</sup> Marquis, *U.S. Halts Cuban Immigration Talks*, *supra* note 125, at A5.

<sup>139</sup> Marquis, *Block Effort to Ease Ban on Cuban Travel*, *supra* note 125, at A6.

<sup>140</sup> Christopher Marquis, *Get-Tough Policy on Cuba May Backfire Against Bush*, N.Y. TIMES, July 29, 2004, at A16.

<sup>141</sup> See generally BARDACH, *supra* note 129.

actual impact of these steps, this Comment aims for a critical, yet fair, evaluation to facilitate the larger study of the “race to the bottom.”

### *B. Communist Environmental Framework and Enforcement*

An examination of the environmental framework in Castro-led Cuba demonstrates the existence of two distinct eras. The first era, from the onset of the 1959 Revolution until the early 1990s, is characterized by ambitious rhetoric on environmental protection<sup>142</sup> that generally outstrips legislative results.<sup>143</sup> The second era in Cuban environmental regulation, emerging in the 1990s, has seen previously unfulfilled promises bolstered by solid advances in the field of environmental policymaking.<sup>144</sup> Inspecting Cuba’s history of environmental legislation and enforcement is the first step towards determining whether Cuba undermines or underlines the “race to the bottom.”

#### *i. Early Communist Environmental Framework and Enforcement*

Although on the radar of the Castro government since the Cuban Revolution, progress toward thorough environmental policymaking was plagued by missteps in the early decades of communist rule. Exemplifying this is the Law of Agrarian Reform, one of the first acts undertaken by the revolutionary government in 1959.<sup>145</sup> The act created new national parks, sent youth conservation brigades into the field, and began a promising Cuban re-forestation effort.<sup>146</sup> While displaying environmental consciousness in the field of forestry, this act was not accompanied by the necessary steps toward creating a thorough

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<sup>142</sup> See, e.g., CONSTITUTION OF THE REPUBLIC OF CUBA, art. 27 (amended 1992) [hereinafter CONSTITUTION OF THE REPUBLIC OF CUBA] (establishing governmental responsibility for environmental protection).

<sup>143</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 72 (noting the lack of power bestowed upon Cuban government agencies in their attempts to protect the environment).

<sup>144</sup> See, e.g., Law 81, The Law of the Environment, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

<sup>145</sup> Oliver A. Houck, *Environmental Law in Cuba*, 16 J. LAND USE & ENVTL. L. 1, 14 (2000) [hereinafter Houck, *Environmental Law in Cuba*].

<sup>146</sup> *Id.*

legislative rubric to address environmental problems.<sup>147</sup> Most notably, the Law of Agrarian Reform failed to create an agency responsible for environmental protection<sup>148</sup> or promulgate comprehensive environmental regulations outside the field of forestry.<sup>149</sup>

Movement towards a more systematic governmental response to environmental concerns in Cuba did not begin until the mid-1970s. The 1976 Cuban Constitution represented the first tangible steps in this direction, declaring:

To assure the well-being of citizens, the state, and society are protectors of nature. It falls within the jurisdiction of legally qualified agencies and of each and every citizen to watch over the cleanliness of the waters and of the air and protect the soil, flora, and fauna.<sup>150</sup>

Attempting to make good on its promise of state environmental protection, Cuba established an agency for enforcing environmental regulations, the National Commission for the Protection of the Environment and the Conservation of Natural Resources (COMARNA), later that same year.<sup>151</sup> Five years later, seeking "to establish the basic principles for the conservation, protection, improvement, and transformation of the environment and the rational use of natural resources,"<sup>152</sup> Cuba passed Law 33, "On the Protection of the Environment and the Rational Use of Natural Resources."<sup>153</sup>

Accepting responsibility for environmental protection and establishing a legislative framework and environmental enforcement agency would seemingly put the nation on track toward positive environmental reform. These efforts, however, did not empower the government to adequately enforce regulations. The legislative mandate establishing COMARNA

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<sup>147</sup> *See id.*

<sup>148</sup> *See id.* at 14.

<sup>149</sup> *See id.* at 23-25.

<sup>150</sup> CONSTITUTION OF THE REPUBLIC OF CUBA, *supra* note 142, at art. 27.

<sup>151</sup> Houck, *Environmental Law in Cuba*, *supra* note 145 at 14-15. *See infra* notes 154-58 and accompanying text for further discussion of COMARNA.

<sup>152</sup> Law 33, On the Protection of the Environmental and the Rational Use of Natural Resources, available at <http://www.medioambiente.cu/legislacion/leyes/L-33.htm>.

<sup>153</sup> *Id.*



failed to give the government adequate powers as an implementing agency, meaning it had little impact.<sup>154</sup> While fulfilling the need for a governmental agency devoted to environmental protection, COMARNA was “essentially a conglomerate of all agencies with environmental responsibilities in Cuba.”<sup>155</sup> Because “the ability to enforce environmental laws and regulations, and the resources to do so, rested with other agencies of the Cuban state,”<sup>156</sup> COMARNA was relegated to the role of a coordinating agency.<sup>157</sup> Perversely, the power to investigate and curb environmental degradation rested with agencies “also responsible for economic production decisions,”<sup>158</sup> instead of the governmental agency sanctioned with responsibility for the environment. Given the shortcomings of COMARNA, the potential for positive environmental regulation in the early decades of communist rule in Cuba was not realized.

*ii. Latter Day Communist Environmental Framework and Enforcement*

*1. Legislative Reforms*

The second era in modern Cuban environmental regulation began in the 1990s when Cuba embarked on an ambitious path, forcing even skeptical commentators to observe that “by Latin American standards, socialist Cuba has a well-developed legal framework of environmental protection.”<sup>159</sup> These new developments were marked by a change in the rhetoric of Cuban environmental policy. While failing to deliver on promises previously made in this arena, the statements of decision-makers and legislative documents signaled a shift in the environmental framework in this instance. At the World Summit in Rio de Janeiro, President Castro spoke in a lofty tone, imploring his audience to fight for environmental equality as a way to “make

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<sup>154</sup> See Houck, *Environmental Law in Cuba*, *supra* note 145, at 15.

<sup>155</sup> *Id.*

<sup>156</sup> *Id.* at 73.

<sup>157</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 72.

<sup>158</sup> *Id.* at 73.

<sup>159</sup> *Id.* at 46.

human living more rational.”<sup>160</sup> Shortly thereafter, buzzwords from the conference found their way into the Cuban environmental lexicon. Before the end of 1992, the Cuban Constitution was amended<sup>161</sup> to endorse “sustainable economic and social development.”<sup>162</sup>

Environmental speak would hardly be noteworthy were it not for the fact that it was a harbinger of change in the field of Cuban environmental regulation. In 1997, rhetoric was transformed into reality with the passage of Law 81, “The Law of the Environment.”<sup>163</sup> Alternatively derided as either overly ambitious<sup>164</sup> or exalted as “much more specific and more concrete than its predecessor,”<sup>165</sup> Law 81 blazed a new trail in Cuban environmental policymaking. At its outset, Law 81 recognizes that “it is necessary to update the legal principles, objectives and basic concepts of Cuba’s environmental policy, institutional framework and the tools for their implementation, the powers, functions and duties of the state agencies and bodies and, in general, the rights and obligation of natural and legal persons.”<sup>166</sup> This desire to revamp the legislative framework resulted in Law

<sup>160</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 16 (quoting Cuban Ministry of Science, Technology and the Environment (CITMA), *Workshop: The Environment and Development* 6 (1997)).

<sup>161</sup> *Id.*

<sup>162</sup> THE CONSTITUTION OF THE REPUBLIC OF CUBA, art. 27, in 5 CONSTITUTIONS OF THE COUNTRIES OF THE WORLD 8 (Gisbert H. Flanz ed. 2000) [hereinafter THE CONSTITUTION OF THE REPUBLIC OF CUBA, Gisbert H. Flanz ed.]

<sup>163</sup> Law 81, The Law of the Environment, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

<sup>164</sup> Orlando Rey Santos, *Reflections on the Legislative Process of the New Environmental Law*, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION 15 (1999). The Director of CITMA’s Environmental Policy Directorate, Orlando Rey Santos, revealed that “while the majority welcomed the Law with pleasure and goodwill” there was also “a minority view, which argued, more or less openly, that the Law was not constructed to fit our particular situation. The conceptual core of this line of thought was that the Law might well obstruct development by establishing such demanding standards for a country beleaguered by so many difficulties.” *Id.*

<sup>165</sup> *Id.* at 14.

<sup>166</sup> Law 81, The Law of the Environment, Pmbl. in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

81 striving to solve problems pertaining to the enforcement of environmental law through the Ministry of Science, Technology, and the Environment (CITMA).<sup>167</sup> It also resulted in giving consideration to the environment in Cuba's economic decision-making through EIAs.<sup>168</sup>

*a. CITMA*

In 1994, the Cuban government consolidated many of the functions of the recently dissolved COMARNA and numerous separate environmental institutes into a new organization, CITMA.<sup>169</sup> The feature separating CITMA from previous efforts at Cuban environmental oversight is the high level of power held by this governmental agency.<sup>170</sup> Its stature superseded that of COMARNA as CITMA "marked the first time in Cuba that a cabinet-level agency was established exclusively for the environment."<sup>171</sup> Unlike COMARNA, CITMA was the unquestionably "central . . . agency for environmental protection, with power and authority to resolve environmental issues" independently.<sup>172</sup>

The key distinction between CITMA and its predecessor is its supremacy in the realm of implementing environmental regulations.<sup>173</sup> Its mandate made this authority clear, directing the agency to "steer and control the implementation of the policy aimed at guaranteeing the protection of the environment and the rational use of resources," "draw up and control the implementation of the programs that will allow for a better environmental control," and "settle the disagreements between the institutions and other entities concerning environmental protection and the rational use of natural resources."<sup>174</sup> In short, CITMA was

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<sup>167</sup> Matias F. Travieso-Diaz, *Key Environmental Legislation for Cuba Transition Period*, in 9 CUBA IN TRANSITION 386, 388 (1999).

<sup>168</sup> *Id.* at 389.

<sup>169</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 19.

<sup>170</sup> *See id.* at 19-20; Whittle et al., *supra* note 101, at 552.

<sup>171</sup> Whittle et al., *supra* note 101, at 552.

<sup>172</sup> Travieso-Diaz, *supra* note 167, at 388.

<sup>173</sup> *See* DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 73.

<sup>174</sup> MINISTRY OF SCI., TECH. & ENV'T, NATIONAL ENVIRONMENTAL STRATEGY 6 (1997) (quoting Agreement No. 2823 of the Executive Committee of the Council of

given what COMARNA lacked: the power to enforce environmental legislation. Prior to this legislative grant, ministries accountable for the management of certain natural resources were concurrently responsible for the economic productivity associated with this resource.<sup>175</sup> With this contradiction addressed, CITMA may develop into an effective environmental protection agency.

At present, it is too soon to determine whether CITMA has produced tangible results. However, there are preliminary indications that the broad grant of authority held by this environmental agency is real.<sup>176</sup> Its 1997 publication of the National Environmental Strategy makes the case for strengthened efforts at environmental protection by compiling a great deal of data on issues such as soil degradation, water pollution, and deforestation as well as suggesting solutions to these problems.<sup>177</sup> Similarly encouraging is CITMA's initiation of a study on curbing environmental degradation in one of the nation's most important rivers, the Cauto.<sup>178</sup> Working to make these proposals a reality, CITMA personnel have begun meeting with other governmental agencies and local governments to help draft environmental strategies for these entities.<sup>179</sup> Perhaps most importantly, CITMA has a role in the formulation of the Cuban budget, giving it some influence to ensure that its efforts to preserve Cuban resources are adequately funded.<sup>180</sup> This evidence highlights the ability of CITMA to serve as a catalyst for environmental protection in Cuba.

Though CITMA has been more effective than COMARNA, some argue that CITMA is still hamstrung by Cuba's communist form of government. Under this form of government, the State is responsible for a disproportionately high level of the nation's economic activity and pollution.<sup>181</sup> Given this governmental

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Ministers of November 28, 1994) [hereinafter NATIONAL ENVIRONMENTAL STRATEGY].

<sup>175</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 73.

<sup>176</sup> See generally NATIONAL ENVIRONMENTAL STRATEGY, *supra* note 174.

<sup>177</sup> *Id.* at 9-18.

<sup>178</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 108.

<sup>179</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 22.

<sup>180</sup> *Id.*

<sup>181</sup> Rajendra Ramlogan, *Protection of the Environment in Cuba: Piercing the Caribbean Iron Curtain*, 29 U. MIAMI INTER-AM. L. REV. 37, 89-90 (1998).

structure, many believe CITMA is unable to prevent most environmental damage, because it is caused by an authoritarian government that answers to no one.<sup>182</sup> Difficulty in curbing environmental abuse by the State is magnified in Cuba because the country does not permit the operation of independent environmental organizations.<sup>183</sup> History has shown that mandating environmental compliance from government industries is difficult, particularly when these enterprises are under economic strain.<sup>184</sup> CITMA “has a significant task ahead”<sup>185</sup> in its attempts to protect the environment in an economy featuring such prevalent government ownership.

In addition to these difficulties inherent in the structure of Cuban government, CITMA has the great responsibility of implementing Law 81, which contains little specificity. For example, Chapter XII of this legislation provides a right to legal action for “whomever has personally suffered” damage pertaining to Law 81.<sup>186</sup> While measures allowing an individual to supplement or ensure governmental enforcement of existing regulations are valuable,<sup>187</sup> Law 81 does not delineate how a person can exercise this right,<sup>188</sup> making the provision’s practical

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<sup>182</sup> *Id.* at 89, 100-01.

<sup>183</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 295. The general importance of public participation in environmental decision-making is discussed in greater detail later in this Comment. See *infra* notes 216-19 and accompanying text. The potential power held by independent environmental organizations of governmental policymakers is illustrated by the recent efforts of the Sierra Club to force Vice President Dick Cheney to disclose records from his energy policy task force. *Cheney v. U.S. Dist. Court for D.C.*, 124 S.Ct. 2576 (2004) (holding that the lower court had acted prematurely in rejecting the Vice-President’s request to block disclosure).

<sup>184</sup> Houck, *Cuba’s New Law of the Environment*, *supra* note 101, at 8. In supporting this point, Cuban legal scholar Professor Oliver A. Houck points out American difficulty regulating government run industries such as the Hanford and Fernald nuclear facilities and locally-run municipal sewage treatment plants. *Id.*

<sup>185</sup> *Id.*

<sup>186</sup> Law 81, The Law of the Environment, Ch. XII, art. 71, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

<sup>187</sup> See PERCIVAL ET AL., *supra* note 14, at 1056.

<sup>188</sup> See Law 81, The Law of the Environment, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

use debatable. Even more problematic is the deficient punishment scheme of Law 81, which provides that any Cuban individual and entity "will be sanctioned with fines in an amount to be determined on a case-by-case basis" for violations of The Law of the Environment.<sup>189</sup> The potential power behind this provision is diluted by the fact that no schedule of fines is provided for violations within the legislation,<sup>190</sup> leaving a potentially arbitrary system of enforcement in its stead. Therefore, it is too early to tell whether CITMA has the wherewithal necessary to translate the broad mandates promulgated by Law 81 into concrete improvements in the Cuban regulatory system.

On the whole, the recent creation of CITMA and its empowerment through Law 81 represents a qualified success. Elevating environmental protection to the level of a cabinet-level ministry and giving it implementation authority resolves the most important problems that plagued Cuban environmental law in recent decades. Nevertheless, problems associated with Cuba's communist regime and a lack of specificity in its environmental law could mitigate these advances. If the regime continues its trend towards a more flexible application of communist governance<sup>191</sup> and CITMA is given the authority to fill in the gaps in Law 81,<sup>192</sup> there is hope that CITMA can mitigate environmental degradation.

#### *b. Environmental Impact Assessments*

In addition to empowering CITMA, Law 81 improves the Cuban environmental framework by providing "mechanisms for incorporating environmental considerations into development projects" through EIAs.<sup>193</sup> EIAs are systematic reviews of projects, policies, and programs with the goal of assessing the environmental impact of an action before a decision is allowed to go forward.<sup>194</sup> Cuba's adoption of EIAs is noteworthy because

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<sup>189</sup> *Id.* at Title II, Ch. XI, art. 68.

<sup>190</sup> *See id.*

<sup>191</sup> *See* SMITH, *supra* note 69, at 308.

<sup>192</sup> *See supra* notes 186-90 and accompanying text.

<sup>193</sup> Travieso-Diaz, *supra* note 167, at 389.

<sup>194</sup> Amparo E. Avella, *The Process of Environmental Impact Assessment in Cuba*, in 5 CUBA IN TRANSITION 396, 396-98 (1995).

many commentators believe EIAs are central to successful regulatory regimes<sup>195</sup> and represent “the seminal concept in modern environmental law.”<sup>196</sup>

The breadth of EIA requirements incorporated in recent years into the Cuban regulatory scheme is vast. Cuban EIAs require consideration of the cumulative impact of a project rather than weighing individual portions of a program independently.<sup>197</sup> These assessments are conducted by CITMA-approved, randomly selected consultants<sup>198</sup> and are paid for by the organization seeking approval for the project in question.<sup>199</sup> In assessing the project, the consultant must identify alternative development plans, including those that are the “most environmentally favorable.” The consultant must also consider the option of not developing at all.<sup>200</sup> While not all projects are subject to EIAs, the number assessed in Cuba has increased throughout the years<sup>201</sup> and now includes all government projects<sup>202</sup> as well as “any other project or activity occurring in a fragile ecosystem, that significantly alters that ecosystem.”<sup>203</sup> Particularly important, given the large amount of foreign money in Cuba’s burgeoning tourist industry,<sup>204</sup> is the fact that foreign investment must be based on the principle of sustainable development<sup>205</sup> and CITMA has the authority to

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<sup>195</sup> See WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW 801 (2d ed. 1994); Houck, *Environmental Law in Cuba*, *supra* note 145, at 26;.

<sup>196</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 26.

<sup>197</sup> MINISTRY OF SCI., TECH. & ENV’T, RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS, art. 15 (1999) [hereinafter RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS]. Demonstrating its practical power in application, Houck notes that “as opposed to reviewing the impacts of specific road projects” this requirement would require “comprehensive reviews of transportation programs.” Houck, *Environmental Law in Cuba*, *supra* note 145, at 28.

<sup>198</sup> RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS, *supra* note 197, art. 39-51.

<sup>199</sup> *Id.* art. 26.

<sup>200</sup> *Id.* art. 25.

<sup>201</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 27.

<sup>202</sup> *Id.* at 28.

<sup>203</sup> RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS, *supra* note 197, at art. 6.

<sup>204</sup> Trumball, *supra* note 67, at 307. In fact, tourism is the top source of foreign currency input into Cuba’s economy. *Id.*

<sup>205</sup> See generally Law 77, Foreign Investment Law, available at <http://www>.

subject foreign projects to EIAs.<sup>206</sup>

The step forward undertaken by Cuba through the incorporation of EIAs becomes apparent when these requirements are compared to those of more developed nations. For example, the mandatory inclusion of alternatives in Cuban EIAs compares favorably to similar requirements in the European Union, where it has taken generations for alternatives to become an integral part of the assessment process.<sup>207</sup> Furthermore, Cuban consideration of cumulative project impacts is more advanced than the European Union environmental framework, which contains no such obligation.<sup>208</sup> Similarly impressive is Cuba's creation of an EIA rubric more advanced than its American counterpart in the identification of projects requiring assessment.<sup>209</sup> While the environmental framework in the United States determines the need for EIAs on a case-by-case basis,<sup>210</sup> CITMA lists the types of projects that will trigger assessment,<sup>211</sup> arguably making the process more systematic and less arbitrary.

Though "laudable,"<sup>212</sup> many argue the structure of the Cuban communist regime will thwart the impact of Cuban EIAs. As mentioned above, most of Cuba's economic activity originates with the State; as a result, the State is the largest polluter in the nation.<sup>213</sup> Thus, conflicts between government as environmental

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medioambiente.cu/legislacion/leyes/L-77.htm. Sustainable development is defined by the Cuban government as the "process of sustainable and equitable improvement of the quality of human life, through which economic growth and social well-being are achieved in harmony with the protection of the environment in a way that satisfies the needs of present generations without placing the needs of future generations at risk." Law 81, The Law of the Environment, Title One, Ch. I, art. 8, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

<sup>206</sup> *Id.*

<sup>207</sup> William R. Sheate, *The Environmental Impact Assessment Amendment Directive 97/11/EC – A Small Step Forward?*, 6 EUR. ENVTL. L. REV. 235, 239 (1997).

<sup>208</sup> See Houck, *Environmental Law in Cuba*, *supra* note 145, at 28.

<sup>209</sup> *Id.*

<sup>210</sup> *Id.*

<sup>211</sup> See RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS, *supra* note 197, at art. 5.

<sup>212</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 73.

<sup>213</sup> Ramlogan, *supra* note 181, at 89.



regulator and government as economic stimulator inevitably arise.<sup>214</sup> These realities lend credence to the concern that "EIAs will only be pro-forma documents used to justify already-made investment decisions by the State."<sup>215</sup>

These fears are magnified by the lack of public participation in the Cuban EIA process. Commentators have noted that "one of the most important . . . components . . . [in] effective environmental protection . . . is public participation in environmental decision-making."<sup>216</sup> This is particularly true when dealing with EIAs. In this context, public participation ensures that affected parties have access to necessary information,<sup>217</sup> that development decisions take public input into account,<sup>218</sup> and most importantly, increases public confidence in the fairness of governmental decisions.<sup>219</sup> Recognizing these benefits, the American system places a premium upon including the public in decision-making;<sup>220</sup> a similar commitment does not exist in the Cuban regulatory scheme. There is no public participation in defining the scope of the assessment undertaken by the Cuban government,<sup>221</sup> no right to appeal the lack of or allegedly defective assessments conducted by CITMA,<sup>222</sup> and information in EIAs is not usually made available to the public.<sup>223</sup> While there are efforts under way to increase the level of public consultation in decision-making,<sup>224</sup> this is an area in which Cuba must improve in order to

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<sup>214</sup> See *supra* note 184 and accompanying text.

<sup>215</sup> Travieso-Diaz, *supra* note 167, at 390.

<sup>216</sup> Neil A.F. Popovic, *The Right to Participate in Decisions that Affect the Environment*, 10 PACE ENVTL. L. REV. 683, 708 (1993).

<sup>217</sup> William A. Tilleman, *Public Participation in the Environmental Impact Assessment Process: A Comparative Study of Impact Assessment in Canada, the United States, & the European Community*, 33 COLUM. J. TRANSNAT'L L. 337, 343 (1995).

<sup>218</sup> *Id.*

<sup>219</sup> See Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1669, 1758-60 (1975).

<sup>220</sup> 40 C.F.R. § 1503 (1989).

<sup>221</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 37.

<sup>222</sup> *Id.*

<sup>223</sup> Whittle et al., *supra* note 101, at 585.

<sup>224</sup> *Id.*; see also EVENSON, *supra* note 78, at 24 (discussing how "the search for solutions to the economic crisis and the survival of socialism required broad popular consultation in order to build a consensus around necessary reforms").

lend credibility to its EIA regime.

Deficiencies in Cuban assessments are not limited to the problems associated with the governmental structure of communism. At present, the process of EIA preparation is suspect. For example, Cuba requires those seeking development permits to pay for the preparation of EIAs,<sup>225</sup> raising the specter that developers may blacklist consultants with reputations for striking down projects.<sup>226</sup> This problem is perversely solved by the lack of CITMA-approved consulting firms to conduct EIAs. In the late 1990s, one firm prepared 95% of all assessments.<sup>227</sup> While potentially solving difficulties pertaining to blacklisting, it is too much to expect one firm to have the resources to thoroughly review nearly every development project or program in Cuba.

Finally, the power of the Cuban EIA to serve as a vehicle for change is challenged on numerous fronts. As was the case with CITMA, the Cuban impact assessment regime is challenged by the lack of specificity in Law 81.<sup>228</sup> Additionally, the mandatory assessment of alternative development plans is frequently undermined as the "locations of new hotels, other structures, and even roads and bridges are generally fixed before the detailed EIA is completed."<sup>229</sup> There are also serious concerns that assessments are not sufficiently thorough and are considered "as afterthoughts

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<sup>225</sup> See RULES AND REGULATIONS FOR THE ENVIRONMENTAL IMPACT EVALUATION PROCESS, *supra* note 197, art. 38.

<sup>226</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 33.

<sup>227</sup> Evenson, *supra* note 78, n.232.

<sup>228</sup> See, e.g., DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 74. As was the case in its aforementioned delegation of authority to CITMA, oversights within Law 81 pose potential obstacles to the Cuban EIA system. In listing projects for which an EIA will be required, Chapter IV, Article 28 of Law 81 includes "facilities for the management, transportation, storage, treatment and disposal of hazardous waste." Law 81, The Law of the Environment, Ch. IV, art. 28(d), in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999). It does not define what constitutes a hazardous waste or what qualifies as management, transportation, storage, or final disposal of such a waste. See *id.* As anyone familiar with the United States hazardous waste disposal statutes can testify, what constitutes a hazardous waste, or a transporter, storage facility, or final disposal site of such a waste, is subject to a great deal of debate. PERCIVAL ET AL., *supra* note 14, at 232-59. Without an explicit definition of hazardous waste and related terminology, Cuba's attempt to require EIAs for such material runs the risk of being unnecessarily complicated and potentially arbitrary.

<sup>229</sup> Whittle et al., *supra* note 101, at 585.

rather than integral parts of the planning process.”<sup>230</sup> While difficulties such as these are expected in a program in its early stages, such shortcomings must be rectified before Cuban EIAs can make an impact.

The measures taken by Cuba in recent years to give environmental considerations a role in development decisions are encouraging. Remarkably, this tiny, developing nation facing serious economic difficulties has, in certain portions of the EIA process, superseded the requirements of the United States and European Union. Despite these accomplishments, there are serious structural shortcomings in Cuba’s assessment regime. Many contend that these shortcomings are products of the nation’s method of governance, but other shortcomings result from the EIA process and the legislation empowering CITMA to conduct EIAs. Though the government has taken positive steps in recent years, these holes must be plugged if the impact assessments are to reach their full potential.

## 2. *Results under the New Environmental Framework*

While reviewing Cuban legislation provides useful information in determining whether the country has deviated from the “race to the bottom,” it cannot conclusively answer this question. Legal scholars agree that pollution in Latin America “is not due to an absence of environmental laws,”<sup>231</sup> but to lax enforcement of existing legislation.<sup>232</sup> Though certain trends are discernible through review of environmental legislation, “implementation will be a severe test of the Cuban government’s commitment” to the environmental laws it has enacted.<sup>233</sup> Recognizing this fact, this

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<sup>230</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 74. Exemplifying this potential shortcoming is the fact that “project documentation regarding treatment and disposal of liquid wastes has tended to be very general, at best making reference to the general treatment that would be used but without detailing design specifications, expected efficiency levels, expected quality of effluents after treatment, and other key parameters.” *Id.*

<sup>231</sup> Armin Rosencranz et al., *Rio Plus Five: Environmental Protection and Free Trade in Latin America*, 9 GEO. INT’L ENVTL. L. REV. 527, 529c (1997).

<sup>232</sup> Donna Lee Van Cott, *Regional Environmental Law in the Americas: Assessing the Contractual Environment*, 26 U. MIAMI INTER-AM. L. REV. 489, 503-04 (1995); Rosencranz et al., *supra* note 231, at 529.

<sup>233</sup> Houck, *Cuba’s New Law of the Environment*, *supra* note 101, at 6.

Comment focuses on Cuba's record of environmental protection in the fields of forestry, agriculture, and coastal zone management to compile a more complete analysis of the current state of environmental protection in Cuba.

*a. Forestry*

Cuba's most successful venture in environmental protection has been its ambitious reforestation program. Shortly after taking power in 1959, the Castro government undertook an aggressive program aimed at reversing centuries of drastic deforestation.<sup>234</sup> The need for such a policy was dire, as this island, which once had 95% of its land covered by forests,<sup>235</sup> had only 14% forest cover by the late 1950s.<sup>236</sup> In order to replenish Cuban forests, the communist government set limits on annual cutting rates<sup>237</sup> and planted 2.5 billion trees between 1960 and 1990.<sup>238</sup> These planting efforts grew more vigorous over time. In fact, by the late 1970s, the number of trees planted by the government was double the level of 1960, and by 1989, three times as many trees were planted than were planted in 1979.<sup>239</sup> The positive effect of this program is undeniable: 500,000 hectares of Cuban land have been reforested since the Cuban Revolution,<sup>240</sup> stemming five centuries of consistent deforestation<sup>241</sup> and increasing the level of tree cover from 14%<sup>242</sup> to 21%.<sup>243</sup>

The communist reforestation program has not been an unqualified triumph, however. Efforts at reforestation, while successful in quantity, have not always been successful in the quality of trees planted. Plantings in the early 1960s focused

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<sup>234</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 143-46.

<sup>235</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 4.

<sup>236</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 141.

<sup>237</sup> WESTOBY, *supra* note 133, at 132.

<sup>238</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 146. These efforts at reforestation were often focused on the reclamation of degraded areas. THE GREENING OF THE REVOLUTION, *supra* note 134, at 65.

<sup>239</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 151.

<sup>240</sup> Ross, *supra* note 133, at 103.

<sup>241</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 141 [Table 6.1].

<sup>242</sup> *Id.*

<sup>243</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 5.

almost exclusively on eucalyptus trees,<sup>244</sup> a tree not particularly well-suited to Cuba's environment<sup>245</sup> and one which can promote erosion.<sup>246</sup> Similar problems plagued the government's planting of casuarina trees at popular beach destinations; ultimately, the government uprooted these trees due to the extensive erosion they were causing.<sup>247</sup> Additionally, reforestation has been much more expensive than necessary.<sup>248</sup> The aforementioned suspect planting decisions, coupled with poor seedling care, have resulted in high tree mortality rates necessitating further costly tree plantings.<sup>249</sup>

Despite these problems, on the whole, Cuban reforestation has been a praiseworthy achievement.<sup>250</sup> Even prior to the recent improvement of the environmental framework, Cuba implemented a successful forestry program. In the face of economic crisis in the 1990s, Cuba continued to produce positive results in this field.<sup>251</sup> Unsatisfied with its seeming victory, the Castro government has set a goal of achieving 27% tree cover by 2007.<sup>252</sup> These accomplishments are unique in Central America and the Caribbean,<sup>253</sup> as Cuba is the only nation in the region to reverse deforestation trends between 1959 and 1992.<sup>254</sup>

### *b. Agriculture*

Cuban agriculture is a locus of one of the most radical environmental shifts since the onset of the "special period." In the first three decades following the Revolution, Cuban agriculture was characterized by its chemical and machine-intensive nature.<sup>255</sup> During this period, fertilizer use increased tenfold, and pesticide

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<sup>244</sup> Ross, *supra* note 133, at 103.

<sup>245</sup> *Id.*

<sup>246</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 152.

<sup>247</sup> *Id.*

<sup>248</sup> Ross, *supra* note 133, at 103.

<sup>249</sup> *See id.*

<sup>250</sup> *See* DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 145.

<sup>251</sup> *See* Houck, *Environmental Law in Cuba*, *supra* note 145, at 5-6.

<sup>252</sup> *Id.* at 5 n.28.

<sup>253</sup> *See* DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 145-46.

<sup>254</sup> *Id.* at 145.

<sup>255</sup> Carmen G. Gonzalez, *Seasons of Resistance: Sustainable Agriculture and Food Security in Cuba*, 16 TUL. ENVTL. L.J. 685, 708 (2003).

use increased fourfold.<sup>256</sup> This level of chemical input greatly superseded that of comparable Caribbean and Central American countries<sup>257</sup> and led to a plethora of environmental problems. Due in part to its heavy reliance on chemicals, 17% of Cuban agricultural land suffers from acidification, while 64% is affected by erosion.<sup>258</sup> Further problems were caused by misuse of mechanized farming techniques during this era. The misapplication of irrigation technology<sup>259</sup> and the extensive use of heavy equipment<sup>260</sup> was a partial cause for poor drainage and soil compaction, respectively.<sup>261</sup>

Following its economic collapse in the 1990s, Cuba shifted from a chemical and machine-intensive strategy to one that promotes organic agriculture<sup>262</sup> and the use of traditional farming techniques.<sup>263</sup> Spearheaded by the Agricultural Ministry, the Cuban government worked to convert "the agricultural sector to low-input, self-reliant farming practices."<sup>264</sup> Gone were chemical fertilizers, pesticides, and tractors; in their place came biofertilizers, ecological pest management techniques, and oxen.<sup>265</sup> Supporting this shift, Cuban scientists promoted green manure crops and the creation of natural fertilizers.<sup>266</sup>

The broad reformation of Cuban agricultural practices is demonstrated in statistical evidence. Following the collapse of the Soviet Union, imports of fertilizers, pesticides, and petroleum

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<sup>256</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 105.

<sup>257</sup> *Id.* at 106-07.

<sup>258</sup> Sergio Diaz-Briquets, *Land Use in Cuba Before and After the Revolution: Economic and Environmental Implications*, in 10 CUBA IN TRANSITION 162, 168 (2000).

<sup>259</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 97.

<sup>260</sup> *Id.*

<sup>261</sup> *Id.*

<sup>262</sup> Gonzalez, *supra* note 255, at 712.

<sup>263</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 91.

<sup>264</sup> Gonzalez, *supra* note 255, at 723 (citing Peter M. Rosset, *Cuba: Ethics, Biological Control, and Crisis*, 14 AGRIC. & HUM. VALUES 291, 294 (1997)).

<sup>265</sup> Fernando Funes, *The Organic Farming Movement in Cuba*, in SUSTAINABLE AGRICULTURE AND RESISTANCE: TRANSFORMING FOOD PRODUCTION IN CUBA, at 15-18 (Fernando Funes et al. eds., 2002).

<sup>266</sup> Hector Saez, *Resource Degradation, Agricultural Policies, and Conservation in Cuba*, in 27 CUBAN STUDIES 40, 59 (1997).

dropped by seventy-seven, sixty-three, and 53%, respectively.<sup>267</sup> These developments seemed likely to curb problems not only pertaining to erosion and acidification but also to soil compaction, as Cuban heavy machinery lay dormant without the fuel to run.<sup>268</sup> Additionally, estimates suggested that upwards of one-third of arable Cuban land was cultivated using organic farming methods.<sup>269</sup> These numbers were higher in certain agricultural fields as nearly 50% of fresh vegetables and 65% of rice were grown using organic techniques.<sup>270</sup>

While these statistics evidence the recent successes in making Cuban agricultural practices more eco-friendly, the durability of this trend is questionable.<sup>271</sup> Agricultural reforms often took place due to scarcities in food, fuel, chemicals, and machine parts as opposed to a redoubling of environmental efforts.<sup>272</sup> This raises the possibility that once the means are available, Cuba will return to its chemical and machine-intensive past. Further underscoring this fear is the fact that restructuring in this field has hurt agricultural output,<sup>273</sup> decreasing production by 33% from 1990 to 1994.<sup>274</sup> This drop in productivity resulted in “the caloric and protein intake of the population” falling and “the first indicators seen in decades of possible malnutrition.”<sup>275</sup> The need for greater food security may ultimately force Cuba to abandon its alternative agricultural development model in favor of more traditional chemical and machinery-driven practices.<sup>276</sup> For now, it is clear that the “special period” has resulted in the communist government enacting agricultural policies consistent with the goals

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<sup>267</sup> *Id.* at 58.

<sup>268</sup> *Id.* at 58-59.

<sup>269</sup> Gonzalez, *supra* note 255, at 727.

<sup>270</sup> *Id.*

<sup>271</sup> *See id.* at 730-31.

<sup>272</sup> *See id.* at 686 (noting the paucity of fertilizers and herbicides since the fall of the Soviet Union).

<sup>273</sup> *See* DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 252.

<sup>274</sup> MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES, *supra* note 64, at 328.

<sup>275</sup> THE GREENING OF THE REVOLUTION, *supra* note 134, at 4. In fact, the “average daily caloric and protein intake by the Cuban population may have fallen by as much as 30% from the levels achieved during the 1980s” by the early 1990s. *Id.* at 22.

<sup>276</sup> *See* Gonzalez, *supra* note 255, at 730-31.

of environmental protection.

### *c. Coastal Zone Management*

Perhaps the ultimate testing ground for Cuban environmental policy is in the field of coastal zone management. Following the collapse of the Soviet Union, the Cuban government placed a great deal of hope for revitalizing its economy in the tourism industry.<sup>277</sup> These efforts have proven successful as Cuba now generates over \$2 billion annually in direct revenue from tourism,<sup>278</sup> nearly a three-fold increase in its share of the Caribbean tourism market.<sup>279</sup> This revenue increase correlates with an influx of tourists. Vacationers, hailing largely from Europe, Canada, and Mexico,<sup>280</sup> have visited the island in numbers increasing from 158,000 in 1984<sup>281</sup> to more than 1,000,000 in 1996<sup>282</sup> to 1,800,000 in 2000,<sup>283</sup> and the Cuban government expects between 5,000,000 and 7,000,000 tourists by 2010.<sup>284</sup> With an increase in tourists comes larger demands on the tourism industry: in 1994, there were 159 hotels with 23,000 rooms, 3,000 rooms were added in 1995,<sup>285</sup> and by 2000 there were nearly 40,000 rooms.<sup>286</sup>

In the face of an exploding level of tourist interest and the need for revenue, Cuba took steps to protect its coastal zone.<sup>287</sup> Central to these efforts was the enactment of Decree Law 212 in 2000.<sup>288</sup>

<sup>277</sup> Whittle et al., *supra* note 101, at 545-47.

<sup>278</sup> *Id.* at 547.

<sup>279</sup> Nicholas Crespo & Charles Suddaby, *A Comparison of Cuba's Tourism Industry with the Dominican Republic and Cancun, 1988-1999*, in 10 CUBA IN TRANSITION 352, 352 (2000). In 1988, Cuba held under 3% of the Caribbean tourism market; by 1999 this figure had increased to 8%. *Id.*

<sup>280</sup> Whittle et al., *supra* note 101, at 557.

<sup>281</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 262.

<sup>282</sup> Charles Suddaby, *Cuba's Tourism Industry*, in 7 CUBA IN TRANSITION 123, 123 (1997).

<sup>283</sup> Travieso-Diaz & Trumbull, *supra* note 73, at 185.

<sup>284</sup> *Id.*

<sup>285</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 262.

<sup>286</sup> Whittle et al., *supra* note 101, at 558.

<sup>287</sup> See DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 263; Houck, *Environmental Law in Cuba*, *supra* note 145, at 43-47.

<sup>288</sup> See Decree-Law Number 212 (Environment Directorate of the Cuban Ministry of Science, Technology and Environment, Environmental Defense, and Tulane University



This statute establishes the general principle that land in the coastal zone, an area extending inland from the high water mark at least twenty meters,<sup>289</sup> “shall preferably remain unoccupied”<sup>290</sup> and mandates that, where land in this area becomes unoccupied, “locating new permanent facilities will not be allowed” unless certain prerequisites are met.<sup>291</sup> Expanding upon these general requirements, the legislation specifically forbids “the creation of new residential or lodging areas” and “the expansion of existing buildings” in the coastal zone.<sup>292</sup> In addition to these regulations, Cuba promotes itself as a destination for those interested in “ecotourism,”<sup>293</sup> defined as “responsible travel to natural areas that conserves the environment and improves the well-being of local people.”<sup>294</sup> Attempting to create an ecologically friendly tourist industry,<sup>295</sup> Cuba founded the National Commission for Ecotourism.<sup>296</sup> In short, the same signs of legislative gains visible on a larger scale in CITMA and EIAs are also apparent in the field of coastal zone management.

There is evidence that these legislative advances have resulted in improved protection of Cuban coastal areas in the “special period.” During this period, air, soil, and, most important for protection of the coastal zone, water pollution have dramatically decreased.<sup>297</sup> There are indications that the Cuban government is willing to vigorously enforce its water quality legislation. For example, in 1997 the government sued the “Roberto Ramirez” Sugar Mill for toxic dumping in the Bay of Niquero.<sup>298</sup> Perhaps

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2000) (translating Cuba’s Environmental Decree-Law No. 212).

<sup>289</sup> *Id.* art. 4. The amount of inland land regulated varies with the type of coast. For example, the coastal zone stretches only twenty meters inland from a low terrace but forty meters inland from the beach. *Id.*

<sup>290</sup> *Id.* art. 15.1.

<sup>291</sup> *Id.* art. 15.2.

<sup>292</sup> *Id.* art. 16.

<sup>293</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 263; Whittle et al., *supra* note 101, at 561.

<sup>294</sup> MARTHA HONEY, ECOTOURISM AND SUSTAINABLE DEVELOPMENT: WHO OWNS PARADISE? 6 (1999) (quoting Ecotourism Society Newsletter 1, no. 1 (Spring 1991)).

<sup>295</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 263.

<sup>296</sup> Whittle et al., *supra* note 101, at 561.

<sup>297</sup> See DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 256.

<sup>298</sup> *Id.* at 71.

most encouraging is the apparent success of the National Commission for Ecotourism: revenue from ecotourism increased from \$11 million in 1999 to \$19 million in 2000 and reached \$25 million by 2001.<sup>299</sup> These statistics provide hope that Cuba might continue to be "spared many of the impacts associated with extensive coastal sprawl and development" and maintain its "many miles of beaches, undeveloped coastlines, and intact reef systems."<sup>300</sup>

Nonetheless, there are numerous environmental problems that continue to threaten the Cuban coastal region. Coastal water pollution, identified by CITMA as one of the most serious environmental problems facing Cuba in the early twenty-first century,<sup>301</sup> originates largely from the ongoing failure to regulate organic discharges into bodies of water.<sup>302</sup> In 1995 alone, the largest 117 sources of pollution in the nation dumped 247,000 tons of biodegradable organic material into coastal areas, an amount "equivalent to the expected discharges of a population nearly 50% larger than that of Cuba."<sup>303</sup> More recent studies indicate that fewer than one in five of the nation's major sources of water pollution adequately treats wastewater before discharge.<sup>304</sup> In addition, more than 70% of domestic wastewater, including human sewage, is either untreated or receives only primary treatment before being discharged into the sea.<sup>305</sup>

Another challenge in protecting Cuban beaches is the danger of sliding towards "Caribbean-style, foreign-owned tourism" that places economics over the environment.<sup>306</sup> An example of this type of development run amok is found at the most popular Cuban

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<sup>299</sup> Whittle et al., *supra* note 101, at 561-62.

<sup>300</sup> *Id.* at 539.

<sup>301</sup> See CITMA, CUBA: ENVIRONMENT AND SUSTAINABLE DEVELOPMENT-10 YEARS AFTER RIO DE JANEIRO SUMMIT "RIO+10" 38 (2002) [hereinafter RIO+10].

<sup>302</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 135-6; Whittle et al., *supra* note 101, at 540.

<sup>303</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 309.

<sup>304</sup> Whittle et al., *supra* note 101, at 540.

<sup>305</sup> *Id.*

<sup>306</sup> Martha Honey, *Tourism and the Environment*, in THE CARIBBEAN ENVIRONMENT: ISSUES OF MUTUAL CONCERN 10-12 (1996) [hereinafter Honey, *Tourism and the Environment*].

beach resort, Varadero Beach.<sup>307</sup> In the past, “a diverse natural complex of mangrove swamps, pristine cays, coastal caves [and] sand dunes” dotted this portion of the coast; today, “only relics of these natural systems/habitats remain.”<sup>308</sup> In their place, a golf course, forty-one hotels, and numerous nightclubs have been built in the last decade.<sup>309</sup> Given the presence of these “sun and fun” tourist destinations, many skeptics believe Cuba’s emphasis on ecotourism is simply “window dressing over the island’s mushrooming conventional tourism” industry.<sup>310</sup>

The water pollution and development issues have contributed to a startling loss of biodiversity in coastal areas,<sup>311</sup> making preservation of biodiversity a principal Cuban environmental concern in the twenty-first century.<sup>312</sup> The discharge of organic materials poisons coastal environments, resulting in algae blooms, fish and shellfish kills, coral reef degradation, and the loss of sea grasses.<sup>313</sup> In addition, environmentally insensitive development projects, such as the one at Veradero, can destroy habitats and disperse native species.<sup>314</sup> These factors help explain why nine of twenty-one Cuban bird species as well as a litany of other species of reptiles, amphibians, and mammals are currently endangered or threatened.<sup>315</sup>

At present, notable policy gains are offset by the failure to address numerous environmental issues in the arena of Cuban coastal zone management. Environmental policy in this field compares favorably to that of other nations in Latin America,<sup>316</sup> but serious problems still persist. Alarming rates of water pollution, coupled with examples of questionable development decisions, have negatively impacted biodiversity at and around

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<sup>307</sup> Whittle et al., *supra* note 101, at 542.

<sup>308</sup> *Id.*

<sup>309</sup> *Id.*

<sup>310</sup> Honey, *Tourism and the Environment*, *supra* note 306, at 10-12.

<sup>311</sup> See Whittle et al., *supra* note 101, at 542 (discussing the effect of development at Varadero Beach on local biodiversity).

<sup>312</sup> RIO+10, *supra* note 301, at 32-39.

<sup>313</sup> Whittle et al., *supra* note 101, at 540.

<sup>314</sup> *Id.* at 542.

<sup>315</sup> RIO+10, *supra* note 301, at 37-40.

<sup>316</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 46.

Cuban beaches. These ongoing problems, along with serious economic straits, promote concerns that natural resource preservation could take a backseat to monetary considerations in future Cuban coastal zone management decisions.

### 3. *General Trends*

This brief overview of environmental protection in forestry, agriculture, and coastal zone management provides a snapshot of recent trends in Cuban environmental reforms and their results. This overview makes clear that the Cuban environmental framework is more impressive on paper than in practice.<sup>317</sup> Cuban coastal zone management exemplifies this problem: despite the rigor with which Decree Law 212 targets destruction, problems persist. Still, positive steps have been taken both in the realm of legislation and enforcement.<sup>318</sup> These advances were made in the face of "severely difficult economic times"<sup>319</sup> during which Cuba vigorously attempted to attract capital into its economy.<sup>320</sup> Thus, this raises questions as to the predictive capacity of the "race to the bottom."

## IV. Analysis

Any meaningful study of the advances in Cuban environmental regulation must take into account every possible explanation of this progress. While a strong case can be made that this Caribbean nation undermines the "race to the bottom," it is necessary to explore alternative rationalizations for the recent improvement in Cuban environmental legislation and enforcement. In addition to considering its potential status as a deviator from the "race to the bottom," this Comment asks whether recent economic displacement or the "personalistic" nature of Cuba's communist

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<sup>317</sup> *Id.* at 79.

<sup>318</sup> There is general information indicating Cuba's environmental laws are not merely for show. In the second half of 2001 alone, 550 individuals and entities were sanctioned for environmental violations, 178 fines were imposed for deviation from statutory regulations, 308 environmental cleanup or compliance orders were issued, and numerous plants were closed permanently or temporarily for failing to meet environmental mandates. Oliver A. Houck, *Thinking About Tomorrow: Cuba's "Alternative Model" for Sustainable Development*, 16 TUL. ENVTL. L.J. 521, 524 (2003).

<sup>319</sup> Houck, *supra* note 145, at 80.

<sup>320</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 2-3.

governance<sup>321</sup> explain the country's counter-intuitive steps towards environmental protection.

*A. Cuba as Deviator from "Race to the Bottom"*

A simple and compelling argument can be made that Cuban environmental progress in the "special period" undermines the logic of the "race to the bottom." The Cuban economy was decimated as the Soviet Union disintegrated. Depression gripped the island in the early to mid 1990s,<sup>322</sup> as Cuba lost its source of economic subsidies<sup>323</sup> and its major trading partner.<sup>324</sup> Responding to this displacement, Cuba abandoned its relatively cloistered position as the "producer of primary goods for the more industrialized" communist economies of the world<sup>325</sup> and adopted market-based economic reforms.<sup>326</sup> If the "race to the bottom" theory holds true, Cuba should have set suboptimal environmental standards as the country engaged in "a race from the desirable levels of environmental quality" in order to attract industry in a competitive marketplace.<sup>327</sup> Many environmentalists argue that Cuba's active pursuit of foreign investment<sup>328</sup> would only serve to exacerbate this "race to the bottom."<sup>329</sup>

But in the "special period," Cuba did not engage in "a race from the desirable levels of environmental quality."<sup>330</sup> Law 81 emerged in 1997,<sup>331</sup> a period of economic uncertainty,<sup>332</sup> and

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<sup>321</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 5.

<sup>322</sup> *Id.* at 43.

<sup>323</sup> Mesa- Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 3.

<sup>324</sup> *Id.*

<sup>325</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 17-18.

<sup>326</sup> See SMITH, *supra* note 69, at 308.

<sup>327</sup> Revesz, *supra* note 1, at 1210.

<sup>328</sup> See *supra* notes 72-89 and accompanying text.

<sup>329</sup> Rhys Jenkins, *Globalisation, Trade Liberalisation, and Industrial Pollution in Latin American*, in *INDUSTRY AND ENVIRONMENT IN LATIN AMERICA*, 13, 14-15 (Rhys Jenkins ed., 2000).

<sup>330</sup> Revesz, *supra* note 1, at 1210.

<sup>331</sup> Law 81, *The Law of the Environment*, in *CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION* (1999) at 21.

<sup>332</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 2-3.

sought to improve the potential for enforcement of environmental legislation<sup>333</sup> and to promote ecologically sound development.<sup>334</sup> Though the results of Law 81 have been mixed, there are examples of improved environmental enforcement in each of the fields studied: forestry,<sup>335</sup> agriculture,<sup>336</sup> and coastal zone management.<sup>337</sup> These improvements provide reason to believe Cuba will address persisting environmental enforcement problems<sup>338</sup> as it emerges from its economic tailspin.<sup>339</sup> Consequently, while the amount of current progress is debatable,<sup>340</sup> the Cuban environmental framework and prospects for the implementation of this legislative scheme have improved. A rote application of the "race to the bottom" would not have predicted such a change.

*B. Explaining Cuban Environmental Progress Without Questioning the "Race to the Bottom"*

If this Comment were to conclude here, it would appear that, at the very least, the "race to the bottom" merits qualification in light of recent progress made in Cuban environmental regulation. There are other rationales, however, for these recent improvements

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<sup>333</sup> Travieso-Diaz, *supra* note 167, at 388.

<sup>334</sup> *Id.* at 389.

<sup>335</sup> See Houck, *Environmental Law in Cuba*, *supra* note 145, at 5-6 n. 28 (noting the increased level of tree cover that has accompanied an ambitious governmental reforestation program).

<sup>336</sup> See Gonzalez, *supra* note 255, at 708-09 & 727 (chronicling the Cuban policy of moving away from environmentally destructive, chemically-intensive agricultural practices to more environmentally friendly, organic techniques and the positive results associated with this shift).

<sup>337</sup> See Whittle et al., *supra* note 101, at 562 (documenting increased revenue from ecotourism corresponding with an increased Cuban focus on this as an alternative to more environmentally destructive "sun and fun" tourist options).

<sup>338</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 135-36; Whittle et al., *supra* note 101, at 540.

<sup>339</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 2 (documenting recent improvements in the Cuban economy); Ramlogan, *supra* note 181, at 73 (noting that "the absence of adequate [economic] resources represents the greatest obstacle to protecting the environment in the developing world").

<sup>340</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 279-80 (concluding that, despite advances in the "special period," Cuba's "environmental future appears to be bleak"); Houck, *Environmental Law in Cuba*, *supra* note 145, at 79 (concluding that recent developments establish that "Cuba has made a commitment to environmental protection").

in environmental law and implementation that do not call into question the validity of the "race to the bottom." Before a solid conclusion can be reached regarding the impact of Cuban environmental policy developments on the "race to the bottom," these other explanations must be taken into consideration.

*i. Protected by its Association with the Soviet Union?*

Cuba reaped enormous financial benefits through its association with the Soviet Union from the early 1960s until the early 1990s.<sup>341</sup> Given the atrocious environmental record of the Soviet Union<sup>342</sup> and its other client states in Eastern Europe,<sup>343</sup> the conclusion that Cuba prospered environmentally from its relationship with these nations is counter-intuitive. There is a plausible argument, however, that Cuba realized sizable environmental benefits due its position in the world communist community.

The first way in which a client-patron relationship with the Soviet Union potentially protected the Cuban environment relates to the island nation's "role within the global socialist division of labor."<sup>344</sup> In the economic community that existed between members of the Council for Mutual Economic Assistance (CMEA)<sup>345</sup> from the 1960s through the 1980s, Cuba's primary function was as "a producer of primary goods for the more industrialized economies."<sup>346</sup> This arrangement resulted in it remaining a predominately agrarian nation.<sup>347</sup> Cuba became a source of agricultural products, such as sugar and citrus, to CMEA countries.<sup>348</sup> Given its access to built-in markets for its goods and

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<sup>341</sup> Mesa-Lago, *The Cuban Economy in 1999-2001*, *supra* note 60, at 3-4.

<sup>342</sup> See generally MURRAY FESHBACH & ALFRED FRIENDLY, JR., *ECOCIDE IN THE U.S.S.R.* (1992).

<sup>343</sup> F.W. Carter & D. Turnock, *Problems of the Pollution Scenario, in ENVIRONMENTAL PROBLEMS IN EASTERN EUROPE* 189 (F.W. Carter & D. Turnock eds., 1993).

<sup>344</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 18.

<sup>345</sup> Gonzalez, *supra* note 255, at 686. The CMEA was a group of Soviet Bloc nations that formed a trading alliance from which Cuba reaped large economic benefits. Spadoni, *Foreign Investment in Cuba*, *supra* note 80, at 158.

<sup>346</sup> Spadoni, *Foreign Investment in Cuba*, *supra* note 80, at 158.

<sup>347</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 166.

<sup>348</sup> Alvarez & Messina, Jr., *supra* note 61, at 175.

enormous Soviet loans and subsidies,<sup>349</sup> Cuba had no need to engage in pollution-intensive economic activities prior to the collapse of the Soviet Union. Accordingly, its industrial base remained weak,<sup>350</sup> and its exploitation of potential Cuban tourist destinations was minimal.<sup>351</sup> While these conditions left Cuba economically vulnerable in the wake of the collapse of the Soviet bloc, they also help to explain why the island nation suffered significantly less environmental degradation than its communist counterparts.<sup>352</sup>

Notably, the Cuban economic depression resulting from the collapse of the Soviet Union also produced environmental benefits.<sup>353</sup> In the "special period," Cuba moved away from chemical and machine-intensive agriculture to a program featuring more environmentally friendly organic farming techniques.<sup>354</sup> While beneficial to the environment, much of this shift was motivated by economic shortages. Without the aforementioned preferential market for Cuban goods or Soviet subsidies,<sup>355</sup> the country experienced a dearth of chemical agricultural inputs such as fertilizers and herbicides.<sup>356</sup> Economic displacement resulted in other environmental benefits during the "special period." For example, "reductions in imports of fuels, raw materials, machinery and spare parts . . . reduced industrial activity and therefore air, soil, and water pollution associated with such activity during the special period."<sup>357</sup> It is impossible to escape the conclusion that many recent Cuban environmental occurrences were motivated by economic shortfalls, and not an environmental awakening.

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<sup>349</sup> MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES, *supra* note 64, at 284. For example, between 1986 and 1990, Cuba received \$11.6 billion in loans and \$10 billion in price subsidies from the Soviet Union. *Id.*

<sup>350</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 17-18.

<sup>351</sup> Whittle et al., *supra* note 101, at 555-56 (noting that investment in the Cuban tourist infrastructure only began as the collapse of the Soviet Union grew near).

<sup>352</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 17.

<sup>353</sup> See, e.g., *id.* at 244.

<sup>354</sup> Gonzalez, *supra* note 255, at 687.

<sup>355</sup> See, e.g., MESA-LAGO, MARKET, SOCIALIST, AND MIXED ECONOMIES, *supra* note 64, at 289.

<sup>356</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 252; Gonzalez, *supra* note 255, at 686;.

<sup>357</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 256.



The above evidence points out that environmentally beneficial policies and efforts at environmental preservation have, occasionally, had nothing to do with a desire to protect the environment. In particular, the lack of industrial pollution and recent eco-friendly developments in the field of agriculture arose out of the economic realities of Cuba's partnership with the Soviet Union. There are those who would expand this argument, believing all recent initiatives "have almost solely responded to economic necessity rather than to a newly discovered fondness for nature on the part of the political leadership."<sup>358</sup> While explaining certain reforms, it is difficult to imagine a short-term economic rationale for Cuban efforts at reforestation or protection of its already comparably clean coastal areas. In short, economic necessity associated with the collapse of global communism was one, but not the only, impetus for the broad overhaul of the Cuban environmental protection regime.

## ii. *Cuban Form of Governance*

As discussed previously, some believe Cuba's communist form of government impedes environmental gains in numerous ways. From the fact that the government makes most of Cuba's economic and environmental decisions<sup>359</sup> to the lack of independent environmental organizations,<sup>360</sup> critics argue that the structure of the Cuban government often makes environmental protection more difficult. It is therefore surprising that the Cuban method of governance may have contributed to recent environmental reforms. In fact, there are those who believe "Castro's personalistic governing style"<sup>361</sup> played a pivotal role in recently renewed Cuban interest in environmental protection.<sup>362</sup>

Central to this argument is the fact that the Cuban form of government is more suited to undertake quick changes in policy than, for example, the American democratic system. In contrast to the U.S., where legislation is subject to congressional, presidential, judicial, and public scrutiny, Cuban decision-making is highly

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<sup>358</sup> *Id.* at 279.

<sup>359</sup> Ramlogan, *supra* note 181, at 89.

<sup>360</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 275.

<sup>361</sup> *Id.* at 5.

<sup>362</sup> See Houck, *Environmental Law in Cuba*, *supra* note 145, at 15-18.

centralized.<sup>363</sup> The power to legislate is vested constitutionally in the Cuban National Assembly.<sup>364</sup> Given that this body has become more democratic in recent years,<sup>365</sup> this is similar to the American republican form of governance. Unlike the United States Congress, however, the powers of the Cuban National Assembly are sharply curtailed. This body meets for less than ten days each year.<sup>366</sup> More importantly, by the time legislation make its way to the National Assembly, it has already been signed off on by the Communist Party.<sup>367</sup> In short, the National Assembly has neither the time nor the authority to challenge Party control in the realm of policymaking.

Streamlining the process of Cuban governance even further is the lack of unbridled critique of Communist Party decision-making. The three major Cuban newspapers, *Granma*, *Juventud Rebelde*, and *Trabajadores* are state run and do not promote serious debate on political issues.<sup>368</sup> Rival political organizations are not allowed.<sup>369</sup> Leaders of "dissident" groups are subject to arrest and imprisonment,<sup>370</sup> and the government is quick to act against "those that attempt to publicize their opposition to the foreign press and embassies or to form party-like associations."<sup>371</sup> The Cuban Constitution does recognize mass organizations,<sup>372</sup> and these groups are generally consulted by the Party on issues relating to

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<sup>363</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 5.

<sup>364</sup> EVENSON, *supra* note 78, at 17.

<sup>365</sup> *Id.* at 24-27. In the early 1990s, Cuba introduced voting reforms which allowed the general public some say in its representation in the National Assembly. *Id.*

<sup>366</sup> *Id.* at 30. The Cuban National Assembly does have nine permanent Commissions which "hold meetings throughout the year to debate issues, draft legislation and review proposed legislation submitted to the" larger body. *Id.* at 29.

<sup>367</sup> *See id.* at 30.

<sup>368</sup> *Id.* at 42.

<sup>369</sup> *See id.* at 31.

<sup>370</sup> *Id.* at 39-40.

<sup>371</sup> DEBRA EVENSON, *REVOLUTION IN THE BALANCE: LAW AND SOCIETY IN CONTEMPORARY CUBA* 35 (1ST ED. 1994).

<sup>372</sup> EVENSON, *supra* note 78, at 18. Cuban mass organizations include the Central Organization of Cuban Trade Union (CTC), the Committees for Defense of the Revolution (CDRs), the Federal of Cuban Women (FMC), the National Association of Small Farmers (ANAP), the Federation of University Students (FEU), and the Federation of Students of Intermediate Education (FEEM). *Id.*

their concerns.<sup>373</sup> Unfortunately, these organizations were often used as mere means to implement Communist decisions.<sup>374</sup> In a positive development, in recent years the Party has stopped directly nominating individuals to leadership posts in these organizations and permitted them greater autonomy, promoting the hope that in the future they can serve as vehicles for independent popular participation in policymaking.<sup>375</sup>

At present, however, "it is inconceivable that legislation would be adopted which had not first met with" approval by the Party.<sup>376</sup> Accordingly, a great deal of authority lies in the hands of the leader of the Cuban Communist Revolution, Fidel Castro.<sup>377</sup> While his stature is often inflated to extremely high levels of omnipotence,<sup>378</sup> it is an inescapable reality that "no major policy decision is made without Castro's approval, and he is known to sometimes intervene in small matters."<sup>379</sup> This level of personalistic governance can produce negative results. Exemplifying this is Castro's obsession with bringing nuclear power to his tiny Caribbean nation,<sup>380</sup> an unsuccessful venture abandoned only after \$1.1 billion was spent.<sup>381</sup>

In the case of environmental protection, however, Castro's high level of control has arguably led to more positive results. At the 1992 World Summit in Rio de Janeiro, Castro lauded the theme of justice through environmental protection, proclaiming:

If we want to save humanity from destroying itself, we have to distribute more equitably the riches and the available technologies on this planet. Less luxury and pilfering from a few countries for less poverty and hunger for the rest of the earth. No more transfer to the Third World of lifestyles and habits of consumerism that ruin the environment. Make human living more rational. Apply international economic order that is

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<sup>373</sup> *Id.* at 27.

<sup>374</sup> EVENSON, *supra* note 371, at 25-26.

<sup>375</sup> *Id.* at 30.

<sup>376</sup> *Id.* at 29.

<sup>377</sup> *Id.* at 1.

<sup>378</sup> DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 5.

<sup>379</sup> EVENSON, *supra* note 371, at 5.

<sup>380</sup> See DIAZ -BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 203-32.

<sup>381</sup> *Id.* at 211.

just. Use all the science necessary for sustainable development, without pollution.<sup>382</sup>

While it is possible to dismiss these words as rhetoric, within the year the Cuban Constitution had been amended to stress the need for "sustainable economic and social development" to ensure "the survival, welfare, and security of present and future generations."<sup>383</sup> This emphasis on "sustainable development" and "future generations" is co-opted from the lexicon of the World Summit.<sup>384</sup> Based on this evidence, Cuban environmental law scholar Professor Oliver A. Houck concludes that at Rio "Castro embraced this environmental revolution, brought it home, and put it in the new constitution, unleashing a chain reaction that is still running its course."<sup>385</sup>

Though it is impossible to discern the exact impact of the World Summit, the available evidence suggests that Castro was influenced by what he heard and saw in Rio. Given the centralized nature of the Cuban government,<sup>386</sup> Castro was able to take the lessons of the World Summit home and translate them into legislative realities. More than merely parroting the verbiage, Cuban reforms, from the emphasis on organic agriculture<sup>387</sup> to the investment in ecotourism,<sup>388</sup> mirror the sustainable development encouraged at Rio.<sup>389</sup> While other factors played their part, Cuba's political will to construct a more environmentally friendly nation motivated recent developments as well.

### *C. Does Cuba Undermine the "Race to the Bottom?"*

Based on the foregoing, there are plausible arguments supporting both the conclusion that Cuban environmental development deviates from or can be explained by the "race to the

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<sup>382</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 16 (quoting Fidel Castro at the World Summit).

<sup>383</sup> THE CONSTITUTION OF THE REPUBLIC OF CUBA, ch. I, art. 27 (Gisbert H. Flanz ed., 2000).

<sup>384</sup> See *supra* text accompanying notes 161-62.

<sup>385</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 18.

<sup>386</sup> See *supra* text accompanying notes 363-79.

<sup>387</sup> Gonzalez, *supra* note 255, at 727.

<sup>388</sup> Whittle et al., *supra* note 101, at 561.

<sup>389</sup> Houck, *Environmental Law in Cuba*, *supra* note 145, at 17.

bottom.” Exposure to market competition did not lead Cuba to engage in “a race from the desirable levels of environmental quality”<sup>390</sup> as proponents of the “race to the bottom” might have predicted.<sup>391</sup> Instead, Cuba improved its environmental framework<sup>392</sup> and took steps to enhance its implementation of these laws.<sup>393</sup> This does not necessarily mean that the logic behind the “race the bottom” is flawed. Many of the counter-intuitive steps Cuba took to upgrade the protection of its resources have their roots in the country’s unique economic<sup>394</sup> and political system.<sup>395</sup>

In judging the alternative explanations of recent developments, the weight of the evidence leads to the conclusion that Cuba does not support Revesz’s revision of the “race to the bottom.” Nothing in Cuba’s recent steps to curb environmental degradation lends support to Revesz’s claim that market competition produces “presumptively beneficial” environmental results.<sup>396</sup> A review of Cuban environmental policy and enforcement in the fields of forestry, agriculture, and coastal zone management undermines this assertion. Those areas which have been relatively insulated from market competition during the “special period,” forestry<sup>397</sup> and agriculture,<sup>398</sup> have also been relatively sheltered from potentially destructive environmental practices. On the other hand, Cuba’s coastal region, an area directly impacted by governmental attempts to encourage foreign investment and attract revenue,<sup>399</sup> hosts an exploding tourist industry which, if unchecked by regulation, could irreparably damage these unique

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<sup>390</sup> Revesz, *supra* note 1, at 1210.

<sup>391</sup> See Stewart, *Environmental Decisionmaking*, *supra* note 10, at 747.

<sup>392</sup> See, e.g., *supra* text accompanying notes 163-168.

<sup>393</sup> See, e.g., *supra* text accompanying notes 169-175.

<sup>394</sup> See *supra* text accompanying notes 344-357.

<sup>395</sup> See *supra* text accompanying notes 359-379.

<sup>396</sup> Revesz, *supra* note 1, at 1253.

<sup>397</sup> See WESTOBY, *supra* note 133, at 132; Ross, *supra* note 133, at 104 (noting that production of Cuban forest products has remained steady during the 1990s).

<sup>398</sup> Gonzalez, *supra* note 255, at 687 (noting that during the “special period,” “Cuba shifted from an export-oriented, chemical-intensive agricultural development strategy to one that promoted organic agriculture and encourage production for the domestic market”).

<sup>399</sup> See *supra* text accompanying note 88.

ecosystems.<sup>400</sup>

While not supporting Revesz's indictment, Cuba does underline that the "race to the bottom" predicts behavior most accurately when dealing with market-based, democratic economies. Cuba's unique economic role in CMEA left it in economic straits with the collapse of communism,<sup>401</sup> and ongoing strife with the United States impedes efforts to transform its economy.<sup>402</sup> Nearly fifteen years after the fall of the Soviet Union, Cuba remains a predominantly agrarian economy without the means to resort to more polluting industries to bolster its economy because it is still largely isolated from market competition.<sup>403</sup> In addition, in the midst of a depression, Cuba's highly centralized government unpredictably launched ambitious environmental reforms.<sup>404</sup> Compare this political maneuver with the United States, where environmental controls are often blamed for slowing down economic growth.<sup>405</sup> Given this popular notion, it is hard to imagine democratically elected politicians campaigning for stricter environmental requirements for industry in the face of economic problems.<sup>406</sup> These features explain Cuba's deviation from the "race to the bottom," and the fact that they are unique to this island nation saves the theory from major revision.

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<sup>400</sup> The aforementioned Varadero Beach exemplifies the dangers of "sun and fun" tourist destinations. See *supra* text accompanying notes 312-314.

<sup>401</sup> Espino, *supra* note 63, at 360.

<sup>402</sup> See *supra* text accompanying notes 113-114 & 136.

<sup>403</sup> DIAZ-BRIQUETS & PEREZ-LOPEZ, *supra* note 68, at 166.

<sup>404</sup> See, e.g., Law 81, The Law of the Environment, in CUBAN ENVIRONMENTAL LAW: THE FRAMEWORK ENVIRONMENTAL LAW AND AN INDEX OF CUBAN ENVIRONMENTAL LEGISLATION (1999).

<sup>405</sup> Holly M. Mock, *Interstate Competition for Jobs and Industry Through Laxity of Environmental Regulations: Pennsylvania's Response and the Effects*, 7 DICK. J. ENVT'L. L. & POL'Y 263, 265 (1998) (noting that the implementation of environmental regulations are often accompanied by "worries from the business world about the cost of complying with the deluge of new laws and how these costs would affect the businesses and the economy as a whole").

<sup>406</sup> In fact, the opposite is often true. For example, since coming into office, the Bush administration has worked to removed obstacles for coal miners, in part, to ensure "a steady supply of cheap, domestic coal at a time of instability in global oil and natural gas markets." Joby Warrick, *Appalachia is Paying Price for White House Rule Change*, WASH. POST, Aug. 17, 2004, at A1.

## V. Conclusion

Seeking to address a lack of empirical evidence in the “race to the bottom” discourse, this Comment has focused on recent developments in Cuban environmental law. Setting the stage for this discussion, this piece chronicled the near universal acceptance of the “race to the bottom,” its application in the international context, and its recent re-evaluation sparked by Professor Richard L. Revesz. This Comment noted that the vast majority of discussion on the “race to the bottom” focused on theory rather than empirical evidence. Attempting to remedy this deficiency, this Comment conducted an intensive study of developments in Cuban environmental framework and enforcement. From this evidence, this Comment concluded that, while not following the pattern predicted by the “race to the bottom,” Cuba also does not provide support for Revesz’s presumption that market competition produces appropriate levels of environmental regulation.

In addition to this conclusion on the ongoing vitality of the “race to the bottom,” this empirical study also provides insight into the trajectory of Cuban environmental regulation. Instead of lending support to Revesz’s revision, Cuba’s adoption of more stringent environmental legislation and more thorough enforcement mechanisms in the face of economic troubles merely highlights that the “race to the bottom” cannot accurately predict governmental behavior in every circumstance. In this case, Cuba’s unique, and somewhat isolated, agrarian economy and centralized government led its policy to deviate from the path predicted by the “race to the bottom.” These same factors, however, point to future challenges to those interested in protecting this island’s ecosystem. If Castro’s death is accompanied by a relaxation of the United States embargo, then capital will likely flood the Cuban economy.<sup>407</sup> A less centralized post-Castro regime, a distinct possibility,<sup>408</sup> may adopt the previously muffled Cuban viewpoint that environmental protection “might well obstruct development by establishing such demanding

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<sup>407</sup> See Coleman, *supra* note 59, at 89 (stating Cuba has been deprived of \$67 billion in trade by forty years of American sanctions).

<sup>408</sup> EVENSON, *supra* note 371, at 1 (noting a great deal of the power over the Cuban government is currently held by Castro).

standards for a country beleaguered by so many difficulties.”<sup>409</sup> In short, though this Comment notes a full fledged “race to the bottom” is currently dormant, it is possible that changing political circumstances in Cuba could make this theory applicable in the near future.

Though the prediction that the “race to the bottom” could play out in Cuba following Castro’s death is supported by compelling evidence, it is important to avoid drawing sweeping conclusions on the vitality of this theory from a one nation analysis. The data on the impact of Cuba’s recent environmental reforms is too anecdotal<sup>410</sup> and its economy still too insular<sup>411</sup> to definitively test the “race to the bottom.” Even more problematic is the paucity of empirical research on the “race to the bottom:” only one such study had been conducted prior to this Comment.<sup>412</sup> Two studies of a theory which animates numerous environmental regulations is inadequate. Further research is needed to either confirm or dispel the findings of this Comment and Engel’s prior study. Given that theory “often fails to capture the unique features of the ecological domain,”<sup>413</sup> thorough empirical testing of the “race to the bottom” is necessary to ensure that current and future domestic and international regulations are grounded in a sound theoretical foundation.

This call for further research is not to say this Comment has been for naught. Though it has not resolved the current scholastic maelstrom surrounding the “race to the bottom,” it has elucidated recent changes in Cuban environmental regulation, demonstrated the power of economic and political will over environmental regulation, and noted that market competition potentially impedes optimal environmental regulations. Most importantly, however, it

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<sup>409</sup> Santos, *supra* note 164, at 15 (describing the minority view opposing the implementation of Law 81); see also *supra* note 405 and accompanying text. The belief that environmental controls slow economic growth could have even greater power in Cuba than the United States, given its comparative economic disadvantage.

<sup>410</sup> See *supra* notes 176-180 and accompanying text. Research on the impact of recent reforms in Cuban environmental legislation would help to answer many of the questions left unanswered by this Comment on the efficacy of these developments.

<sup>411</sup> See *supra* text accompanying notes 110-114.

<sup>412</sup> See *supra* text accompanying notes 51-56.

<sup>413</sup> Esty, *supra* note 40, at 613.



has highlighted shortcomings in the “race to the bottom”<sup>414</sup> and its recent critique<sup>415</sup> and underlined the need for additional empirical testing of these theories.<sup>416</sup>

CHRISTOPHER A. BROOK

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<sup>414</sup> See *supra* text accompanying notes 401-406.

<sup>415</sup> See, e.g., *supra* text accompanying notes 120-124.

<sup>416</sup> See *supra* text accompanying notes 410-413.

